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ABSTRACT

This report describes the cooperative extension system and evaluates the consequences of its educational programs. An executive summary provides an overview of the contents: background, highlights of findings related to consequences, interpretations, and implications for the future. Following an introduction, chapter 2 discusses extension in terms of its development, organization, roles, relationships, and resources. The next four chapters describe the four program areas: agriculture and natural resources, home economics and nutrition, 4-H youth, and community and rural development. The following program consequences are identified for each program area: agricultural extension programs have contributed significantly to growth in agricultural productivity and efficiency and have increased average net income per farm; participants in extension home economics and nutrition programs report savings from home gardening, food preservation, home repair, sewing, and upholstery refinishing; the most visible consequence of 4-H was participation itself; and community and rural development programs have taken an initiating role in addressing needs of disadvantaged citizens. Chapter 7 summarizes the economic and social consequences of the extension programs. An epilogue reviews and interprets issues highlighted during the evaluation as they related to questions concerning institutional support, role, programs, objectives, clients, funding, and other aspects of the Cooperative Extension Service. (YLB)

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United States
Department of
Agriculture

Science and Education
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Washington, D.C.

ED246275

# Evaluation of Economic and Social Consequences of Cooperative Extension Programs

CE 039327

January 1980

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# EXECUTIVE SUMMARY: EXTENSION EVALUATION

This report describes the Cooperative Extension system and evaluates the consequences of its educational programs. The report was requested by Congress in the Food and Agriculture Act of 1977 (Section 1459, Title XIV). The Secretary of Agriculture was asked to provide " ... an evaluation of the economic and social consequences of the programs of the Extension Service and the Cooperative Extension Services."

## BACKGROUND

The Cooperative Extension system is made up of a Federal office in the U. S. Department of Agriculture and the Extension Services located within the land-grant universities in 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam.

Extension is the largest off-campus informal education system of its kind in the world. Its resources currently include $629 million support from Federal, State, and county governments; nearly 17,000 professionals, 10,000 program aides, several hundred thousand volunteers; and an office in virtually every county in the country.

This evaluation was a joint effort of the Department of Agriculture and the State Extension Services. A policy group guided the project, a design team developed the blueprint for it, and a core staff conducted the required studies and wrote the report. An independent citizens' panel reviewed the project report. Their comments are included in appendix I.

## ECONOMIC AND SOCIAL CONSEQUENCES HIGHLIGHTED

### AGRICULTURE AND NATURAL RESOURCES

By increasing the rate of adoption of new technology and knowledge generated by research, agricultural Extension programs have contributed significantly to the growth in productivity and efficiency of U. S. agriculture. This, in turn, has contributed to overall economic development, capacity of U. S. agriculture to increase exports, and moderation of the increase in prices of food and fiber to consumers.

Despite the depressing effect of increased production on farm prices, Extension assistance has increased average net income per farm.

True, these same developments also have led to fewer and larger farms. But by making technology and new knowledge available to more producers, Extension seems to have helped a large number of producers remain in farming.

An estimated two-thirds of U. S. agricultural producers had direct contact with Extension programs in 1978.

Medium and large farm operators have more contact with Extension programs than small farm operators. Only in recent years has a conscious effort been made to implement programs specifically for small, limited resource farmers.

## HOME ECONOMICS AND NUTRITION

A recent Gallup poll showed that 17 million persons, or about 10 percent of today's adult population, have participated actively at least once in some aspect of Extension home economics and nutrition programs.

People in rural communities participate more than those in urban communities. Adults with moderate to high incomes and professional status participate more than low-income and manual workers. Whites participate at almost double the rate of nonwhites.

Fifty-one percent of the respondents (85 million adults), including the 10 percent who actively participated in a program, reported receiving Extension information. The principal sources were newspapers, television, radio, publications, and newsletters. Among respondents receiving Extension information, 30 percent said food preservation and food preparation were the subjects covered most frequently. About 40 percent of the respondents said the information received was "very useful" or "fairly useful." But half of the respondents could not recall the subject matter.

Estimates of benefits from home gardening and food preservation Extension programs range from $150 to $600 savings per program participant. For programs on home repair, clothing, refinishing of upholstery, and sewing machine maintenance, estimates of benefits range from $10 to $50 per participant.

Some 1.7 million families have participated in Extension's Expanded Food and Nutrition Education Program (EFNEP) since it began in 1968. Almost three-fourths had family incomes of less than $5,000. Fifty-eight percent lived in cities; 60 percent represented minorities. Analysis of food servings shows that 21 percent of those remaining in the program for 24 months served adequate diets at this time, compared with 4 percent of all entrants at the time of entry.

## 4-H YOUTH PROGRAMS

The most visible consequence of 4-H is participation itself. More than 4 million youth participated in one or more 4-H activities during 1976. More than one-half million parents and adult volunteers helped conduct those activities. No comparable substitute for these programs would have been available for most of the youth and volunteers who live in rural areas.

Consequences such as knowledge gains and development of new skills and capacities are well substantiated and highly reliable. Consequences such as changes in social attitudes and social behavior are not as well supported.

4-H is a primary cause of knowledge gains and improved skills and capacities in many cases, but is only instrumental in others. Evidence of the effect of 4-H on social attitudes and behavior is weak. Probably the most important impact of 4-H on social attitudes and behavior is the maintenance role it plays in rural communities.

Almost 90 percent of the families of 4-H members have incomes of more than $10,000 and 40 percent have incomes of more than $20,000. Participation is about equally divided between boys and girls. Eighty-six percent are from 9 to 15 years of age. Minority participation is relatively high (21 percent) but is not evenly distributed by geographic region or by program delivery system.

Private sources provide about a third of the financial support for 4-H. These sums are used to support programs through awards, trips, camping, and other special incentives. In addition, the monetary value of lay volunteer services is estimated to be almost four times the amount of Federal, State, and county funds allocated for 4-H.

## COMMUNITY AND RURAL DEVELOPMENT

Community and rural development programs presently serve about 10 percent of the more than 60 million people in rural areas. Program participants include private citizens, local government representatives, local service clubs and development organizations, State governments, and Federal agencies.

A study of 52 local Extension community and rural development projects in 29 States showed that approximately one-third of the projects were designed specifically to serve geographically, socially, or economically disadvantaged citizens. Generally, Extension has taken more of an initiating role than most other local groups in addressing the needs of disadvantaged citizens through Extension programs.

Because Extension's typical role is that of educator, catalyst, convener, and coordinator, it is not easy to measure the approximate share of credit attributable to Extension efforts. But program clients give high ratings to Extension's assistance in improving community problem-solving capacity, community facilities and services, local public policies, and rural income opportunities.

## INTERPRETATIONS RELATED TO CONSEQUENCES

To guide this evaluation, the policy committee identified many policy-related questions. These questions concerned Extension's support, clients, program objectives, relationship to other organizations, and education methodology.

## POLICY DIRECTION, FUNDING, PROGRAM OBJECTIVES, AND CLIENTELE

Because Extension is subject to many sources of policy influence and funding, management of the system is more accurately described as "coordination." Each State Extension Service offers programs in the four broad areas of agriculture and natural resources, home economics and nutrition, 4-H youth development, and community and rural development. However, program objectives and clientele vary from State to State and from county to county.

Federal funds for Extension work, $258 million in 1978, account for 41 percent of the total support for Extension. States put in another 39 percent and counties, 20 percent. More than half of the Federal funds are allocated to States using a formula specified in the Smith-Lever Act and based on farm and rural populations.

A small Federal staff administers Extension legislation, provides administrative and technical program assistance to the States, and serves as a link among the States, the USDA agencies, and other parts of the Federal government. This staff is both catalyst and clearinghouse, accelerating the adoption of successful State and county programs.

Under existing legislative authorities and memoranda of understanding between the USDA and the State Extension Services, the definition of specific program objectives and target clientele is left mainly to the States and counties. The States must submit annual plans of work for the Department's approval. And the Department must concur in the selection of new State Extension directors. But these tools, although available, are seldom used to influence program and clientele priorities.

The Federal role is strongest when policy direction is written into the law or Federal funding is earmarked for a specific purpose. Extension's Expanded Food and Nutrition Education Program, integrated pest management, and urban gardening programs are prime examples.

The greatest influence on the choice of Extension programs and clientele is generally found at the county level--and not by accident. Extension takes pride in its grassroots orientation. County agents are close to the needs of people. Local advisory groups have substantial influence.

The system does respond effectively and often rapidly to certain national problems which also are felt at State and local levels. Energy is a case in point. Another is Extension's response to natural disasters, such as floods and drought.

The response is weakest when the need is confined to clientele unable to communicate its need at the local or State level (disadvantaged groups primarily), and when the incentive of individuals to seek educational assistance is lacking, as in the case of pressures for improved environmental quality.

Earmarking of Federal funds ensures attention to national problems. But it tends to minimize grassroots participation in the development of locally accepted objectives or support. At times, however, earmarking helps State and local managers make program shifts they consider important, but as a rule they prefer the stability and the flexibility of unearmarked formula funding.

Extension's clients and diversity of their needs have increased dramatically in recent years. Extension has handled this expansion, in part, by wholesaling more educational materials through mass media and by hiring paraprofessionals. Some people are concerned about these changes. They think wholesaling will not lead to the kinds of behavioral changes that follow more intensive educational assistance. Many traditional agricultural clients fear that the broadening of Extension's clientele will dilute services to them. Extension has been reluctant to reduce traditional services, fearing a loss of support from traditional clientele.

## EXTENSION'S RELATIONSHIPS WITH AND RESPONSE TO OTHER ORGANIZATIONS

Extension appears to complement or supplement, rather than compete with, the abundant information and the education now provided by the private sector and other public agencies. Extension often serves as a primary source of verification of information from other sources. It also performs a referral function. Farm magazines and other mass media draw heavily on Extension staff and materials for their information. Extension also has helped the private sector organize service activities such as producer cooperatives and farm recordkeeping associations.

Extension's working relationships with action and regulatory agencies are broader and more diverse than most people realize. They range from client referral to full collaboration in program development and delivery. Examples of the latter are farm safety, pesticide applicator training, and certain nutrition programs.

Action and regulatory agencies seek Extension assistance, in part, because they know that clients generally do not identify Extension with the Federal or State government. Extension, on the other hand, carefully enters into relationships with others to protect its credibility and image as an educator.

Extension's direct ties to research are cited as a major strength of the system. The main link between Extension and research occurs at the State campus. Many State Extension staff members have advanced degrees and joint appointments in research and/or resident teaching and Extension.

This link is much stronger in agriculture than in any other subject matter. Agricultural Extension staff members translate and deliver research knowledge to farmers and feed information and technology needs of farmers back to researchers. Studies show that a sizable portion of the estimated 30 to 60 percent rate of return on public investment in agricultural research is because of Extension.

## EXTENSION METHODOLOGY

Demonstration and person-to-person or one-to-one teaching approaches still are major techniques of Extension education. But group meetings, mass media use, and audiovisual technology have expanded substantially. Recorded telephone messages, open circuit TV, video tape, and computers now supplement people and printed material.

The more personal channels of communication have the greatest impact on clientele. But only small numbers can be reached by that method. Cost is a big factor. A recent study in North Dakota showed a cost per contact of between $7 and $16 for meetings but only 3 cents per contact for TV.

Extension has tried to fit the methodology to the educational need. Farmers considering major changes in their operations may require several one-to-one sessions. Less motivated clients, like many families in the Expanded Food and Nutrition Education Program, require even more time and attention. But farmers or urban gardeners who need only a reminder that it is time to carry out a certain cultural practice can be reached easily by mass media.

4-H works through volunteer leaders. This requires extensive time to recruit lay leaders and much personal and group contact to train them. This is the same for many of the home economics and community development programs. The "snowball effect," however, pays countless dividends for such investment of time.

## IMPLICATIONS AND FUTURE ISSUES

### PROGRAM AND CLIENTELE DETERMINATION

Because the Extension system is decentralized and its objectives general, it is not easy to agree on the most appropriate clientele mix. A longstanding, if implied, objective of Extension has been to improve the efficiency of agriculture. Another objective gaining in importance is simply helping individuals who need help the most. If the former is emphasized, Extension would work primarily with commercial farmers who contribute the most to agricultural production. If the latter is emphasized, small, limited resource farmers and disadvantaged people would receive greater attention.

### FUTURE DELIVERY OF EXTENSION EDUCATION

The county agent is cited as a fundamental strength of the Extension system. But the agent's role is changing.

Certain problems now addressed by Extension require more specialization. Many commercial farmers want contact with the county agent but often go directly to the campus specialist for help. County agents continue to perform an important referral function.

If county agents become more specialized, they could deal directly with more local problems. But they would tend to lose the breadth of exposure and the understanding of a generalist.

The budget factor will become more critical. Extension now is finding ways to reach more people with fewer dollars. It is using more multicounty or area agents. But clientele acceptance of this approach is slow.

Because of the combination of increasing, diversified demands and tight budgets, the alternative of multi-State Extension programing will receive increasing consideration.

## CLOSING COMMENT

This evaluation has its own consequences. Throughout the Extension system, there is a growing understanding of Extension's strong points, its limitations, and the issues it now must face. "Evaluation" is no longer synonomous with "investigation." Already in motion are plans to build an ongoing Extension evaluation capability that will overcome certain limitations encountered by this evaluation.

These limitations deal primarily with (1) the difficulty in precisely measuring change as a consequence of education and (2) the lack of sufficient data and a refined conceptual framework to adequately measure social and economic consequences of Extension programs. The lack of sufficient data is due largely to the breadth and the variety of Extension programs. This breadth and variety is sometimes reflected in general stated objectives and diverse interpretations of these objectives by various participants in the Extension system. The ongoing evaluation and the reporting capabilities will not be limited to the question, "How many people were reached?", but when possible, will respond to the question, "So what?" These efforts will guide the development of a new and relevant information reporting system for Extension as well as help continue to raise the sensitivity of staff members at all levels concerning the importance of adequately measuring results.

# I.
# Introduction

## I. INTRODUCTION

The Food and Agriculture Act of 1977* required that the Secretary of Agriculture provide the Congress with " ...an evaluation of the economic and social consequences of the programs of the Extension Service and the Cooperative Extension Services...." In response to that mandate, this report identifies and evaluates program consequences for the Extension system. Extensive documentation supports this report as well as providing insight and guidance for future Extension program evaluation efforts.

This evaluation was undertaken as a joint effort of the U. S. Department of Agriculture and the State Cooperative Extension Services, the latter through the Extension Committee on Organization and Policy (ECOP) of the National Association of State Universities and Land-Grant Colleges. ECOP appointed an evaluation task force in August 1977 to explore means of assisting and participating with the Department. In January 1978, a policy group** was convened to provide guidance for conducting the evaluation of Extension programs. The policy group named a design team*** to develop a project plan and to develop procedures for implementing the plan.

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*P. L. 95-113.

**The policy group was comprised of M. Rupert Cutler, Assistant Secretary for Conservation, Research and Education, U. S. Department of Agriculture; Maynard C. Heckel, Director of Extension, University of New Hampshire; Anson Bertrand, Director, Science and Education Administration, U. S. Department of Agriculture; W. M. Bost, Director of Extension, Mississippi State University (replaced George Hyatt, Director of Extension, North Carolina State University, on July 1, 1978); John O. Dunbar, Director of Extension, Kansas State University; Molly Frantz, Office of Management and Budget; Milton Harding, Administrator of 1890 Extension Program, Virginia State College; Howard W. Hjort, Director of Economics, Policy Analysis and Budget, U. S. Department of Agriculture; W. Neill Schaller, Deputy Director for Extension, Science and Education Administration, U. S. Department of Agriculture; J. B. Siebert, Associate Director of Extension, University of California.

***Members of the design team were Lynn Maish, Program Analyst, Office of Budget Planning and Evaluation, U. S. Department of Agriculture; John Fedkiw, Deputy Director, Policy Analysis, Office of Budget Planning and Evaluation, U. S. Department of Agriculture; Ray Vlasin, Dean of Lifelong Education Programs, Michigan State University; W. W. Wood, Jr., Extension Economist, University of California; Susan DeMarco, Consultant, Austin, Texas; Claude Bennett, Science and Education Administration-Extension, U. S. Department of Agriculture.

A number of significant decisions were made about efforts to evaluate Extension programs.

(1) The evaluation would emphasize both positive and negative program consequences. Additionally, effectiveness and efficiency would be considered as they contributed to that emphasis.

(2) The Congressional mandate would be used as an opportunity to develop evaluation guidelines and identify potential program outcome indicators for future continued use by Extension program planners.

(3) The evaluation would be conducted objectively and in an open manner; independent external contractors would be utilized when time and resources permitted; wide use of external technical review would be sought when project components were undertaken within the Extension system.

In addition, an independent citizens' review panel would be asked to comment on objectivity and thoroughness of the final report.

## EXTENSION EDUCATION

An analytical framework was developed to provide hypotheses about relationships and consequence indicators. Four functions of Extension education were identified: knowledge dissemination, change inducement, information validation, and capacity building.

*Knowledge dissemination* - distribution of information, technology, and skills. This includes checks to verify that information is received and understood.

*Change inducement* - demonstration and other techniques designed to persuade recipients to adopt attitudinal, behavior, or practice changes. Inducing change requires the intervention of some other factor such as economic benefit, social pressure, or availability of other proposals. Technical assistance is a frequent technique.

*Information validation* - provides a check against which citizens can test the reliability and the relevance of information from a variety of other sources.

*Capacity building* - efforts to enhance decisionmaking capacity so that citizens can deal with both increased information and changing situations.

Extension roles and activities contribute or lead toward one or more of the identified functions. A principal objective of Extension education is to assist citizens in developing rational decisionmaking capabilities. Such capabilities facilitate the use of information, technology, and skills as well as provide a basis for deciding when adoption of change is appropriate. Because educational programs operate in concert with other influences, it is rarely possible to credit such programs with having caused a particular consequence.

## QUESTIONS DEVELOPED

To develop maximum utility for the results of this evaluation effort, inquiry was made of various interested parties about their expectations. Expectations about evaluation results were varied.

For guidance of the project staff, a set of policy-related questions was developed to help focus on critical issues and program consequences. The questions, directional rather than specific for obtaining answers, were intended to be comprehensive but not a complete and final list. The questions were not ranked in any particular priority order, but under the general categories of clientele, program objectives, and problems; Extension's relationship and response to other organizations and institutions; and educational methodology and techniques. Those questions were as follows:

*Questions Related to Policy Direction and Funding*

- How does Extension determine its priorities? How broad based is participation with Extension decisionmakers in determining these priorities?
- To what extent have Extension programs been responsive to national problems and objectives?
- To what extent have Extension programs been responsive to State and local problems and objectives?
- To what extent have local problems been carried to the State level for design of State programs?
- To what extent have local and State problems been carried to the national level for consideration in designing national programs?
- What are the strengths and the limitations of the current Extension decisionmaking system, especially with regard to its ability to respond to national problems and objectives? What impact does the Federal government have on State and local budgets and programs?
- What are the strengths and the limitations of the current Extension decisionmaking system, especially with regard to its ability to respond to State and local problems and objectives?

*Questions Related to Clientele and Program Subject Matter*

- How responsive and effective has Extension been in identifying and serving new clientele and in providing new programs in response to new social and economic problems and priorities?
- To what extent have traditional clientele and programs been phased out as objectives have been fulfilled or have become less urgent? Do established programs limit the ability to expand into new programs?

- What factors limit shifts in program objectives and clientele served as programs and priorities change?

- What factors or criteria would be useful in deciding upon desired future programs, including clientele and objectives? What factors or criteria are used and who decides (or has decided in the past) upon clientele and objectives?

- To what extent are "disadvantaged" groups served in comparison to those in higher socioeconomic strata?

- To what extent does Extension reach urban or suburban clientele as opposed to rural (farm and nonfarm) clientele?

*Questions Related to Alternative Sources of Similar Services*

- What implications do alternative private and public sources of similar services have for Extension activities? How has Extension adapted to the existence of these alternatives?

*Questions About Extension's Relation to Action Program Agencies*

- How and to what extent does Extension support or relate to action agencies of the USDA and other Federal, State, and local governmental agencies regarding similar clientele, similar objectives, or similar or complementary roles? What factors determine (facilitate or limit) Extension's role in relation to other agencies' objectives or roles?

*Questions About Extension's Linkage to Research*

- Where does Extension get its research or knowledge base? How effectively has it transmitted new research findings to clientele? Has it served as an effective feedback mechanism to researchers?

- How effectively would research results be transferred without an Extension system? What are the values attributed to research which may not have been transferred?

*Questions Related to Extension Educational Delivery Methods*

- To what extent does Extension rely on one-to-one approaches? How effective are these and what alternatives are there to present one-to-one arrangements?

- What are the alternative communication and educational techniques that can be used in Extension programing? How effectively are they used?

- What is the significance of local, district, or State location of staff and resources in meeting program objectives and in serving clientele? What is the significance of specialization in Extension toward meeting program objectives and serving clientele?

In response to these questions, data are presented throughout the four program area sections of this report (sections 3, 4, 5, 6) that have relationship to these questions. The epilogue provides some detailed response to these questions.

## EVALUATION REPORT

This report begins with an executive summary that provides an overview of the contents of the report: background, highlights of findings related to consequences, interpretations, and implications for the future.

The report describes Extension in terms of its development, organization, roles, relationships, and resources. The description attempts to put the Cooperative Extension system in perspective in an objective fashion with only limited evaluation of either organizational structure or program development and delivery.

Each of the four program areas--agriculture and natural resources, home economics and nutrition, 4-H youth, and community and rural development--is described and program consequences are identified.

Suggestions are offered for continuing evaluation and issues are highlighted. These suggestions flow both from appraisal contracts by an independent firm and analyses from the project staff.

An epilogue reviews and gives some interpretation to issues highlighted during the process of the evaluation as these issues relate to various aspects of the Cooperative Extension system.

## CONDUCT AND LIMITATIONS OF THE STUDY

Diversity of programs among States and counties is characteristic of the Cooperative Extension system. Frequently viewed as a strength, this diversity is a major hurdle in identifying specific total program objectives against which economic and social consequences can be evaluated. More typical Federal programs have centrally determined objectives; Extension education tends to depend upon a set of objectives established on program component and on geographic location bases.

The major limitation to this evaluation study is the lack of appropriate and comparable data. While extensive data were available indicating various types of inputs as well as participation, little attention has historically been devoted to measuring impacts.

Evaluation of Extension programs has taken place through evaluation of specific programs and user acceptance of the programs. In an informal educational agency such as the Cooperative Extension Service where participation is voluntary, unless an activity is believed to be useful, participants do not come back for more. Also, when Extension information is "wholesaled" through commercial dealers or mass media, it is passed through a second filtering process. (The dealers or the mass media editors or broadcasters must determine if the information is useful before agreeing to pass it on to their customers, readers, or listeners.)

Estimated economic results from educational programs of Extension have been cited, but rarely has causal evidence been substantiated. Such citations have tended to concentrate on positive economic impacts. Unintended or unexpected impacts or those that might be interpreted as negative have been largely ignored. Furthermore, because of difficulties of measurement, little attention has been given to social impacts.

Because of these limitations, this evaluation project attempted to develop analytic approaches and use these approaches to provide at least preliminary data. In most instances, such data are more indicative than substantiating.

This study does not address natural resources specifically. Historically, Extension educational programs have incorporated natural resources--including such subjects as forestry, land, soil, and water--as a portion of agriculture and community development programs rather than as separately identified programs.

Program evaluation methods were designed by project core staff members* who were responsible for individual program areas. Each of the program areas identified in the mandate--comprising the broad scope of Extension education--was pursued as a quasi-independent study. This approach resulted in the development of several evaluation techniques which gave a variety of program results, making consolidation into an integrated report difficult.

## ADDITIONAL MATERIALS AVAILABLE

A large volume of documentation provides the basis for this report. Included are the individual reports evaluating the economic and social consequences of each program as well as papers and studies commissioned for this project on specific topics. These reports have been written from a national perspective. The reader should be cautioned, where generalizations have been made, that some State and county programs may be different than the statements made.

This material is available in three supplemental appendices. Appendix I contains three reports--an evaluation of this report by the citizens' review panel, a short history of the Cooperative Extension system, and a report by a member of the evaluation project design team who observed several county Extension programs.

Appendix 2 is a bibliography listing the various papers and studies commissioned for the evaluation project on specific topics.

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*Principal core staff members and program responsibilities were: W. W. Wood, Jr., Project Director; Lynn Maish, Agricultural Production and Distribution; Nancy Harries-Belk, Home Economics and Nutrition; James Meyers and Kenneth Pigg, 4-H Youth; Howard Tankersley and Richard Wheaton, Community and Rural Development; Mary Johnson, 1890 Institutions; Claude Bennett, review and appraisal of past studies; William L. Carpenter, editing and writing; Twila Crawford, editing.

In addition to currently available documentation, a special history of Extension in the United States was commissioned as a portion of this project. That history, to be produced by the History Section of the Department's Economics, Statistics, and Cooperative Service, will require at least an additional year to complete. Its emphasis will be on documenting development and response of Extension to pressures and opportunities at county, State, and national levels. This history will constitute appendix 3 of the supplementary materials.

In addition to the three appendices, the more comprehensive reports that form the basis for sections 3, 4, 5, and 6 of this report also will be published as separate volumes.

All materials are being made available to Federal and State Extension offices. Additional copies will be available at cost from the National Technical Information Services.

# II.

# The Cooperative Extension Service

## II. THE COOPERATIVE EXTENSION SERVICE

### HISTORICAL DEVELOPMENT

In 1906 the U. S. Department of Agriculture (USDA), through the Bureau of Plant Industry, sent Seaman A. Knapp to Texas to help farmers combat the boll weevil. The following year a farmer was persuaded to try the changes in cultural practices which Knapp suggested. Local businessmen pledged to reimburse the farmer if the new practices failed. Other farmers were invited to come by and see the "demonstration."

Before long the demonstration method proved to be effective in helping farmers solve a number of their problems. It quickly spread throughout the South. William J. Spillman, also of the USDA, introduced similar projects throughout the North and West.

Agricultural education was not new. In 1862 Congress had passed legislation establishing the U. S. Department of Agriculture and the Morrill Land-Grant Act which provided for the sale of public lands to support a college in each State that would, among other things, "teach such branches of learning as are related to agriculture and the mechanic arts...."

But the early agricultural teachers at the new land-grant colleges soon found there was not much to teach. Partially in response to this need for new facts to present to students, the Hatch Act in 1887 provided financial support for an agricultural experiment station in each State.

As the experiment stations began to accumulate information which could be of use to farmers, most college professors and researchers acknowledged the importance of outreach or Extension activity. Land-grant colleges held meetings for farmers on campuses and elsewhere in the States.

By 1900 agricultural development in the United States was seen as lagging behind development of other sectors of the economy, despite a sizable amount of "better farming" information being accumulated in the land-grant colleges and the U. S. Department of Agriculture.

Also, according to one historian, "a significant number of farmers had come to think of themselves as businessmen whose job it was to use the latest knowledge and technology to produce food and fiber as massively, efficiently, and profitably as possible. They expanded acreage under tillage, they mechanized, and, in a limited way, they turned for technical assistance to the land-grant agricultural colleges and experiment stations."1/*

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*When references are made to existing materials or materials compiled as a part of the evaluation project, these references are noted at the end of each section of this report.

Interest grew in other quarters, such as the National Soil Fertility League, for a nationwide Extension education effort to be financed by Federal, State, and local sources and administered by the land-grant schools. Advocates began the legislative dialogue in Congress in 1909.

The funding (Federal-State-local) and the administration of such a program was a new idea, and not one readily adopted by Congress. Also, the details of the arrangement required considerable discussion and negotiation among the several interested parties. Particularly troublesome was the basis on which the Federal funds would be allocated. Debate occurred about what educational methods should be used.

These issues were resolved in 1914 with passage of the Smith-Lever Act. The Cooperative Extension Service (CES) was born.

Today the Cooperative Extension Service operates in all counties of the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam, with almost 17,000 professional employees, approximately 12,000 clerical workers and other support staff, more than 10,000 paraprofessional workers, and the assistance of more than 1 million unpaid volunteer leaders. The annual operating budget, from Federal, State, and local funds, is almost $630 million.

Extension has programs in four major areas--agriculture and natural resources, home economics, 4-H youth, and community and rural development. In each of these areas, there are programs, and program direction, from Federal, State, and local levels. Extension has been called complex and dynamic, differing somewhat from any other private or government agency, and almost defying description. This section of the report is designed to provide some insight into the system, what it is, and how it operates.

## SMITH-LEVER AND OTHER LEGISLATION

The Smith-Lever Act created the cooperative partnerships among the U. S. Department of Agriculture, land-grant colleges and universities, and county governing boards. It set forth the major function "...to aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics and to encourage the application of the same...." It specified that the clientele would be "persons not attending or resident in said colleges in the several communities...." The methodology would consist of "field demonstrations, publications, and otherwise."

The compromise worked out on funding was that the size of the rural population in each State would largely determine how much each State would receive.

A number of legislative acts from 1928 through 1978 increased the funding authorization for the organization; changed the funding formulas; and authorized funding for services to certain client groups such as small farmers, inner-city residents, disadvantaged persons or low-income residents, and for special programs such as agricultural marketing and energy conservation.

1890 EXTENSION

Following a return to normalcy in the southern States after the Civil War, land-grant colleges were established in each of the States in the 1870's and 1880's under the Morrill Act of 1862. However, by State laws, blacks were generally excluded from attending these institutions. To remedy this situation and make educational opportunities at the land-grant institutions available to all citizens, Congress in 1890 passed a second Morrill Act specifically to support the black land-grant institutions. These land-grant institutions are referred to today as "1890 Institutions."

Those southern States which did not have black institutions by 1890 each established one later under this Act. Listed are these institutions, the dates they were established, and the establishing agencies.

| Date | Institutions | Establishing Agency |
|---|---|---|
| 1866 | Lincoln University (Missouri) | Civil War Negro Infantrymen |
| 1871 | Alcorn State University (Mississippi) | State Legislature |
| 1872 | South Carolina State College | State Legislature |
| 1873 | University of Arkansas, Pine Bluff | State Legislature |
| 1875 | Alabama A & M University | Group of Ex-Slaves |
| 1876 | Prairie View A & M University (Texas) | State Legislature |
| 1880 | Southern University (Louisiana) | State Legislature |
| 1881 | Tuskegee Institute (Alabama) | State Legislature |
| 1882 | Virginia State College | State Legislature |
| 1886 | Kentucky State University | State Legislature |
| 1886 | University of Maryland -- Eastern Shore | Methodist Episcopal Church |
| 1886 | Florida A & M University | State Legislature |
| 1890 | Delaware State College | State Legislature |
| 1891 | North Carolina A & T University | State Legislature |
| 1895 | Fort Valley State College (Georgia) | Citizen's Group |
| 1897 | Langston University (Oklahoma) | Territorial Legislature |
| 1909 | Tennessee State University | State Legislature |

Tuskegee Institute was created by an act of the Alabama Legislature; however, 12 years later the State established and incorporated a board of trustees and made the school private, in spite of the fact that it was granted 25,000 acres of land by the U. S. Congress in 1899. In subsequent Federal legislation affecting the 1890 institutions, Tuskegee Institute has been included.

Some agricultural instruction, both resident and Extension, had been carried on by the black institutions before land-grant funds became available in 1890, beginning at least as far back as 1868 at Hampton Institute in Virginia. About 1880, Booker T. Washington, first teacher-principal and president of Tuskegee Institute, began holding monthly meetings at Tuskegee Institute for farmers, ministers, and other interested persons. Through discussions and exhibits, Washington and his associates attempted to teach better farm and home practices. These monthly meetings

led to the first Tuskegee Institute Farmers' Conference in 1892. Later, efforts were made to carry the information to persons who could not come to Tuskegee for the training.

In early agricultural instruction, "a need was seen for more black agents who could work more closely and sympathetically with people of their own race and adapt the demonstration to their special needs."2/ By the passage of the Smith-Lever Act in 1914, there were approximately 100 black men and women demonstration agents in 11 southern States.

Following the passage of the Smith-Lever Act, the 1862 institutions were designated to administer the Extension programs. The 1862 institutions had black Extension administrators and district agents housed at the 1890 institutions. These persons were responsible for black Extension work and supervision of black personnel in each State. In the counties, the black agents were generally housed separately from the white agents.

## USDA-STATE MEMORANDUM OF UNDERSTANDING

A memorandum of understanding between each land-grant institution and the Secretary of Agriculture is the principal basis on which Extension work has been conducted since the passage of the Smith-Lever Act in 1914. Today there is some variation from this agreement in the day-to-day operation of Extension programs.

In the agreement, the USDA agreed to maintain in the Department a Federal Extension Service which is charged with the administration of the various Acts relating to Extension work, has primary responsibility for and leadership in all educational programs of the Department and coordination of all educational phases of other programs of the Department (except the Graduate School), and acts as the liaison between the Department and officials of the land-grant colleges and universities. Except in special cases and with mutual agreement by both parties, the USDA conducts all Extension activities through the various land-grant institutions.

The land-grant institutions agreed to organize and maintain a distinct administrative division for the conduct of Extension work and the administration of Extension funds, and to conduct all educational work in the fields of agriculture and home economics and other educational programs of the USDA.

The agreement called for joint program planning for the use of Federal Extension funds between the State Extension Services and the U. S. Department of Agriculture and for annual State plans of work approved by the Federal office. State and county Extension personnel are joint representatives of the land-grant institutions and the USDA, and the cooperation between the land-grant institutions and the USDA is set forth in all publications or printed matter issued by or used in the various programs.

The two-page agreement is signed by the president (or other top official) of a land-grant institution and the Secretary of Agriculture.

## PROGRAM ACCOUNTABILITY

The Smith-Lever Act specified that on or about the first day of July of each year, "the Secretary of Agriculture shall ascertain as to each State whether it is entitled to receive its share of the annual appropriation for cooperative agricultural Extension work under this Act and the amount which it is entitled to receive. Before the funds herein provided shall become available to any college for any fiscal year, plans for the work to be carried on under this Act shall be submitted to the proper officials of each college and approved by the Secretary of Agriculture."

Annual State plans of work and certain reports still require the approval of the Secretary of Agriculture or his designee. The Secretary also must approve the director (administrator for 1890 institution) selected by the land-grant institution to administer the work in each State, and Department of Agriculture personnel are responsible for auditing the fiscal operations of each State Extension program and for monitoring the use of penalty mail funds.

An annual plan of work is developed by each county office and by each specialist group or department on the university campus. These plans are reviewed by the State administration and then forwarded to Extension, USDA for review and approval.

These plans often are developed with the help of citizen advisory committees. A common pattern is to have a countywide Extension advisory committee with a subcommittee for each major area of work or for each commodity group. The chairperson, and sometimes other members of the subcommittees, is a member of the county advisory committee. In some States, there is a State advisory committee and commodity advisory groups.

Some counties present a yearend review of their programs to county government officials and other local leaders. At the State level, program reviews often are conducted by program areas and for commodity groups, and the USDA conducts comprehensive reviews of land-grant university departmental programs that include the Extension component. Some States also conduct comprehensive county reviews in which Extension personnel from the State office interview a selected group of individuals in the county to obtain their perceptions of the Extension Service and its programs in the county.

Reports are provided to members of Congress and other government officials, as requested.

# RELATIONSHIPS AND PROGRAM MANAGEMENT

## STATE-FEDERAL RELATIONSHIP

Extension work is carried out with the aid of cooperative agreements between the U. S. Department of Agriculture and the land-grant colleges or universities in each of the States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam.

The administrator of the Department's Extension unit is responsible to the Secretary of Agriculture. Prior to 1977, Extension was a separate USDA unit. As a result of a Departmental reorganization in 1977, Extension became an operating unit of a new agency, the Science and Education Administration (SEA). The administrator for Extension became the Deputy Director for SEA for Extension. The Deputy Director reports to the Director of SEA who in turn reports directly to the Secretary. Extension leadership at the Federal level is, in effect, a shared responsibility of the Director of SEA and the Deputy Director for Extension.

The Extension unit, SEA-Extension, has about 100 staff members. They provide Extension program leadership. Personnel in the administrative management units of SEA carry out various administrative functions of the Federal member of the Cooperative Extension system.

The relationship of Federal to State units is not hierarchical but is more one of negotiation between concerned equals. When funds have been allocated by the Federal government for a specific purpose, it is the responsibility of the Federal partner in the Cooperative Extension system to provide interpretation of the legislation and to see that the programs are conducted according to legislative intent. With regular formula funding, program plans must be approved; programs and monies spent are closely monitored.

This system is in direct contrast to the straight line or action agencies of the U. S. Department of Agriculture where instructions, program thrusts, and directives are explicitly handed down from the Federal to State and local offices.

The relationship between the States and the Department of Agriculture through the Extension Service has remained cooperative and effective, although at times it has been strained. Federal and State representatives meet regularly to discuss problems or potential problem areas. State Extension administrators often visit the USDA Extension offices. Federal Extension administrators regularly appear on the programs of annual State Extension conferences and at the Extension section during the annual meeting of the Association of State Universities and Land-Grant Colleges. A newsletter goes regularly from the Federal to the State offices, and many of the Extension specialists in the USDA have newsletters going to the States. Also, previous Federal Extension administrators, and now the Deputy Director for Extension in SEA, have been ex-officio members of the Extension Committee on Organization and Policy (ECOP), and program leaders in SEA-Extension participate on major ECOP committees.

## EXTENSION - USDA

It has been said that the Extension unit within the U. S. Department of Agriculture "exists to do things which the State Extension Services cannot do readily or easily. It mobilizes, interprets, and prepares the resources of the United States Department of Agriculture for the use of State Extension Services. It interprets area, national, and international situations. It obtains and organizes the active cooperation and support of regional and national groups. It approves cooperative projects that involve the use of Federal and Federal-offset funds. It informs the

public about State Extension programs and the progress made toward accomplishment of objectives."3/ It also provides a linkage at the Federal level to other departments and agencies in addition to its educational arm functions for the USDA.

## THE STATE EXTENSION ORGANIZATION

The general structure of State Extension organizations is similar in that each State has a director, program leaders, supervisors, subject matter specialists, and county agents. Many States have area specialists and/or agents as well as county agents.

In some States, the dean of the college of agriculture also is director of the Cooperative Extension Service. A variation of this pattern is when the dean also is director with an assistant or associate in operational charge of Extension work. In other States, there is a director of Extension responsible to the dean of the college of agriculture.

Another type is the university with colleges of agriculture and home economics. The director of Extension is responsible to the deans of both of these colleges for their Cooperative Extension work.

In a few States, the director of Extension is directly responsible to the president or vice president of the institution. These directors also may be responsible for all extension done by the institution--general and cooperative.

Whatever the organizational pattern, the State director of Extension is selected by the governing body of the State institution, with the approval of the Secretary of Agriculture, to head a division of that institution concerned with Cooperative Extension work. The State Extension director has authority over programs, personnel, and budgets, including allocation of funds to program areas, development of program thrusts and approval of county and State programs, personnel policies, selection and advancement of individuals within the organization, and level of pay for each professional employee not subject to State personnel systems.

These and other variations in the State Extension organizations have significant impacts on the relationship of Extension to other branches of the land-grant university and have potential impact on Extension programs.

## THE LAND-GRANT SETTING

College and university administrators vary widely in their knowledge of, interest in, and support of Cooperative Extension programs. One extreme is when administrators regard Extension and other outreach programs as the most important function being performed by the institution. Extension often is cited when the institution is being discussed, and Extension personnel are regarded as full-fledged members of the academic community.

At the other end of the spectrum are those administrators who don't "seem to be aware that we exist," are apologetic for having an Extension program, and relegate Extension personnel to a staff level somewhat below academic and research personnel.

Within the colleges of agriculture, relationships among subject matter departments and among Extension, research, and instructional divisions vary considerably from State to State, probably reflecting desires and efforts of administrators in fusing together the various program components over time. On a more local level, personal relationships between individuals often determine, to a large degree, the amount of interaction and working together that takes place.

When Extension programs were more simple, and the clientele were more homogeneous, the necessary information and the support needed by Extension workers were generally available to them within the boundaries of the colleges of agriculture and home economics. Today Extension workers need information and assistance from others within the university structure--engineers; air, water, and energy experts; architects and designers; social, psychological, and health scientists. Often the services of these individuals are not readily available to Extension personnel--except by persuasion. If they are available, some type of consulting arrangement with extra pay often is required.

In the counties, the professional staff members hold university appointments, but the degree to which individuals identify with the university community differs considerably among Extension staff members. Most agents have a strong bond to the county they work in, viewing it as home, and feeling an intimate involvement with the people there.

## TIED TO RESEARCH

The colleges of agriculture at all land-grant institutions, and the colleges of home economics at many of them, have a three-fold function--the academic affairs division to provide the resident teaching of undergraduate, graduate, and special program students; the Extension division for off-campus instruction; and the research program for development and evaluation of knowledge and technology.

Cutting across these three divisions of work are subject matter departments with each department carrying out the three functions of research, Extension, and resident instruction. With few exceptions, Extension specialists are housed on the university campus and, in many cases, are adjacent to or with the researchers and the resident faculty in the same academic department.

In a number of institutions, State specialists have joint appointments with the research and the academic affairs programs at their universities. County employees are usually full-time Extension. The following data indicate that about 20 percent of the total Extension staff holds joint appointments.

| Percentage of Time on Extension Appointment | Number of Employees |
|---|---|
| 0 - 49 | 1,700 |
| 50 - 79 | 902 |
| 80 - 99 | 701 |
| 100 | 13,520 |

The closeness between researcher and Extension specialist serves two functions:

(1) To make available to the people in usable form the results of research applicable and useful to them.

(2) To bring to the attention of research agencies new problems that people are facing.

Over the years, the agricultural research stations have been Extension's lifeblood for new technology and solutions to agricultural problems. In fact, agricultural Extension work originated with the need for a more effective way to assist land-grant educators and researchers to disseminate information about agricultural and natural resource management techniques.

In recent years, Extension specialists have assumed some of the tasks that were formerly carried out by researchers--the field testing of new ideas and the trial of new products and other types of "applied" research. In some instances, specialists work in consultation with researchers in their common areas.

Although the State and the USDA research services still are the primary sources of information on agricultural matters at the 1862 land-grant institutions, the research base is generally weak at the 1890 institutions. The 1890 institutions, for the most part, have only loose ties to the research programs at the 1862 institutions in their own States.

The research base also is generally weaker at both sets of institutions for the other Extension programs: home economics and nutrition, 4-H, and community and rural development. Home economics and nutrition research has not had the financial support that has been accorded to agriculture, and in some cases, the home economics teaching program in a State is fragmented or scattered and is not on the same campus as the Extension operation.

Many of the concerns of community and rural development are outside strictly agricultural areas with research based on other parts of the land-grant campus, or other institutions, and not in easy access of Extension specialists. Few 4-H specialists have formal linkages to a research base.

But in agriculture, a recent study suggests that Extension's contribution to productivity growth associated with technical change has been substantial, and its effect comes through its complementarity with research. That is, Extension's

contribution is heavily dependent upon the flow of potentially valuable new technologies for agricultural research. Extension facilitates more rapid and complete adoption of new technologies developed by research.4/

Today Extension specialists and agents have many sources of information available to them, such as applied practices by farmers, homemakers, and youth; commercial research establishments; books, magazines, and journals. But the agricultural research system of the State and Federal government remains the most important source, and the source of a considerable amount of the credibility.

## THE COUNTY OFFICE

The basic unit of the Cooperative Extension Service is the county Extension office where program delivery is focused. Such an office is composed of professional and secretarial staff. In many counties, there are paraprofessionals known as technicians or program aides. Volunteer leaders provide considerable input into county Extension programs.

There is an understanding between the State office and the county offices for the conduct of Extension work in each county. In some States, this understanding is implied; in others it is in the form of a written memorandum. The cooperating group within the county may be the informal leadership through which county agents work; it may be a definite organization which, in many States, has a legal basis for cooperation; or it may be the governing body of the county. County advisory boards or groups have either legal or implied responsibilities for jointly directing the work in the county with the State Extension Service of determining budgets, providing local funds necessary to finance the program, hiring personnel, and carrying out agreed to plans.

In most States, there is an administrative head of each county office, often called a chairperson or county director. In addition to providing various management services for the county office, this individual is directly responsible to the State director and the county cooperating or governing group.

Over the years, county agents have become more specialized. In recent years, some agents in agriculture and resource development have been assigned more than one county, and the area concept has developed. In the counties with larger staffs, an agent may be responsible for only a single crop or an area of work.

## STATE ASSISTANCE TO COUNTIES

State Extension offices are organized to help county offices perform their functions with a line organization composed of directors and supervisors. Through this line organization pass the administrative and supervisory responsibilities of the services. Some of these responsibilities involve operational efficiency, personnel selection, training and management, determining and carrying out policies; developing programs and making plans to carry them out; evaluating effectiveness of the organization and its work; arranging for funds to finance the work; establishing and maintaining satisfactory relationships between the college and the county operating groups; and reporting to officials and to the public.5/

A county staff needs specialized assistance. Methods of programing, presenting information, and organization as well as subject matter are some of the kinds of specialized help required. Such specialized help is given by the State Extension office through its staff organization composed of specialists in various subject matter fields. The type of specialization varies considerably from State to State, depending on the size or the importance of a particular subject matter area in a State, and the size of the State Extension Service. For example, in a large State with a crop of considerable importance, there may be several specialists assigned to work with this particular crop, but with minor crops, or in a smaller State, a single specialist may have responsibility for several crops.

These specialists keep the county worker informed on research developments and interpret data so that they may be properly applied toward improvement of business and living conditions. The specialist performs a staff function and is not responsible for administrative matters.

The State office also includes a group of specialists who provide auxiliary services to the entire Extension Service. Accounting and editorial offices are examples of these services. Personnel in such areas as information, radio, visual aids, and exhibits provide direct support as well as training to county workers in their respective specialists.

State legislative appropriations for Cooperative Extension work, in most cases, are made to the land-grant institutions. These funds are handled by the fiscal department of the land-grant institution at the direction of the State director of Extension.

County funds are generally appropriated to and administered by a county sponsoring board or group, or are appropriated and administered by the governing body for the county. In some States, county funds are turned over to the State Extension Service for administration. These States either pay all county costs from such funds or make allotments to county sponsoring groups to cover these costs.

## 1890 TO 1862 INSTITUTIONS' RELATIONSHIPS

Extension has a unique situation in the 16 southern and border States where there are two land-grant institutions in each State. Although there has been Extension activity at most of the 1890 institutions for many years, specific Federal funding for this purpose was not made until 1972 when Congress appropriated money directly for both 1890 research and Extension activities. The monies for Extension, however, were channeled through the State Extension director located at the 1862 institution in each State. The 1977 Food and Agriculture Act changed that. Federal Extension funds now are provided directly to 1890 institutions.

This legislation, while seeming to create two separate administrative structures in each of the affected States, directed that, "The State director of the Cooperative Extension and the administrative head for Extension at the eligible institution (1890) in each State where an eligible institution is located shall jointly develop, by mutual agreement, a comprehensive program of Extension for such State to be submitted for approval by the Secretary within one year after enactment of this title."

There are three types of State organizational structures agreed upon by 1890 and 1862 institutions in terms of cooperation and coordination of programs, staff, and other details for a single Extension system within a State. They were developed to promote, at all levels, a unified program and to discourage fragmentation and duplication of programs.

(1) In some States, an organizational structure is used in which the 1890 and 1862 Extension plan and implement a single concept State Extension Service program for clients on a statewide basis utilizing resources from both institutions. Programs sometimes are implemented individually by one institution, and other times jointly by both institutions. Personnel are organized according to program content and competencies. The 1862 institution plans and implements programs that address clientele needs in all program areas to all clientele. The 1890 institution plans and implements programs to meet the needs of a target clientele.

(2) In other States, a unified planning system but a separate program delivery system exists. Programs are planned by both administrations where programs are spelled out for each institution to carry out within designated counties or areas. The 1862 institution implements programs for all potential clients statewide, and the 1890 institution implements programs limited to specific subject matter for a target clientele.

(3) In one State, the State Extension programs for the two institutions are integrated and funds and administrative matters are conducted through the 1862 institution. However, the 1890 State staff is housed at the 1890 institution and specific programs for designated counties for target clientele are planned and implemented from 1890 institutions.

To achieve a unified coordinated one-State program, all three of the State administrative organizational structures plan meetings between the two institutions at least four times a year. In some States, the 1890 administrators are part of the administrative staff of the 1862 schools.

Administrators of the Extension program at the 1890 institutions point out several critical problems they face in developing effective programs and adequately meeting clientele needs. They say two major problems are the changed relationships with the 1862 institutions and inadequate funding. A study of 1890 programs and operations, carried out as a part of this evaluation, found that "cooperation with 1862 institutions appears to be a major need." The varying level of intensity appears to be related to the particular need of the 1890 institution and the status of its relationship with the 1862 institution. Based on comments of the various respondents, this need would be more properly defined as an issue. Comments seem to point up critical factors: (1) the dependency of 1890 on 1862 institutions over the years; (2) the defining of 1890 institutional activities on the basis of income and race; (3) the critical crises of identity, autonomy, and survival; and (4) the different funding methods for 1890 as compared to 1862 institutions.6/

The 1890 institutions are primarily dependent upon a single source of income--the USDA. Failure to obtain substantial revenues from other sources such as county, State, and private foundations has imposed tremendous restrictions on 1890 institutions in the areas of service delivery and hiring of professional and paraprofessional personnel.

Passage of the 1977 farm bill was thought to provide increased flexibility for 1890 administrators to manage their own resources. In practice, however, the farm bill reportedly has been of little assistance because no additional money was provided for management and operations. In a spring 1979 study, more than half of these administrators indicated that the 1977 legislation has impeded their efforts because some services previously provided at no cost (such as auditing, personnel, publications and supplies, penalty mail, editorial) now must be paid from their own funds.7/

## RESOURCES

### FUNDING LEGISLATION

The initial Smith-Lever Act authorized a permanent appropriation of $3,480,000 for Extension work, with $10,000 to go to each State and the remaining $3 million to be distributed on the basis of rural population (to be matched by the State).

Funding increased each year. By 1924 the amount expended for Extension work had increased to $19.4 million of which $19.1 million was expended in the States and $.3 million in connection with activities of the Federal office in Washington. About 38 percent of these funds came from Federal sources.

Increased funding followed the increased authorization in the Capper-Ketcham Act of 1935. Fiscal 1936 expenditures totaled $29.5 million, of which Federal funds accounted for $17.6 million or about 60 percent. This represented the highest percentage of funding ever coming from the Federal government. In 1935 the Bankhead-Jones Act specified that the farm population in each State would serve as a basis for the allocation of Federal funds to the States.

Special wartime activities and the Bankhead-Flannagan Act of 1945 provided additional Federal authorization, and in the 10 years following World War II, there were considerable increases in State and county funds.

In 1935 Congress enacted Public Law 83 that consolidated the Smith-Lever Act with nine other acts relating to Extension work. This law also established a new funding formula--48 percent on the basis of rural population, 48 percent on the basis of farm population, and 4 percent on the basis of special needs.

The first instance where the Smith-Lever Act was amended to provide for distribution of funds other than by a formula came in 1955. This amendment provided separate funds for Extension programs directed to the needs of disadvantaged farms and farm families. Similar legislation was passed to support pesticide education (1965), Appalachia region (1965), rural development (1966), food and nutrition education (1968), 1890 colleges and Tuskegee Institute (1972), community resource development (1972), farm safety (1975), and pesticide impact assessment (1977).

A 1962 amendment changed the formula for allocating funds to States. It provided that 4 percent of any increased funds over the 1962 level would be allocated to the Federal Extension Service for administration and coordination of

Cooperative Extension work. Of the 96 percent of payments to the States and Puerto Rico, 20 percent would be distributed equally, 40 percent on the basis of rural population, and 40 percent on the basis of farm population.

For many years, the Smith-Lever Act provided the authorization for almost all Federal Extension funding. There were instances, however, when a specific piece of legislation was enacted that provided authorization for a number of agencies having interests or responsibilities in a broad program area. The Extension Service has received funds under the following authorizations which included authorizations for other agencies: Agricultural Marketing Act, Clark-McNary Forestry Act, Title V Rural Development Act, Farmer-to-Consumer Direct Marketing Act, and Section 109 of the District of Columbia Education Act.

## CURRENT FUNDING

For fiscal 1978, $629 million was available for Extension work in the United States and its possessions from the several funding sources as shown in table 1. Extension funds available by source since 1919 are shown in table 2.

Table 1. Amount of Funding Available by Source, Fiscal Year 1978

| Source | Amount | Percentage |
|---|---|---|
| Federal sources | $257.6 million | 41 |
| State appropriations | 245.6 million | 39 |
| County appropriations and nontax funds | 125.8 million | 20 |
| Total | $629.0 million | 100 |

Table 2. Cooperative Extension Funds Available, By Source, From Fiscal Year Beginning July 1, 1919 (Thousands of dollars)

| Fiscal Year | Grand Total[a] | Federal Percentage[a] | State Appropriation Percentage | County Appropriation Percentage | Non-Tax Percentage |
|---|---|---|---|---|---|
| 1919 | $ 14,662 | 62 | 20 | 16 | 2 |
| 1924 | 18,879 | 37 | 37 | 23 | 3 |
| 1934 | 19,896 | 47 | 25 | 24 | 4 |
| 1944 | 36,740 | 52 | 23 | 22 | 3 |
| 1954 | 89,531 | 36 | 38 | 24 | 2 |
| 1964 | 177,920 | 38 | 39 | 21 | 2 |
| 1974 | 407,452 | 41 | 40 | 18 | 2 |
| 1978 | 586,744 | 37 | 42 | 19 | 2 |

[a]Grand total and Federal percentage exclude Federal appropriation for penalty mail, Federal retirement, and Federal administration. This adjustment is necessary to permit comparability among years.

The nontax funds come from local and national businesses, foundations, and individuals and make up around 2 percent of the total Extension funding. Of the program areas, 4-H receives the largest amount of nontax monies. Each year the National 4-H Council raises about $9 million from national donors. Most of these funds are for specific activities or program areas, such as awards to provide recognition and to encourage participation in areas such as 4-H projects, homemaker activities, and farm production contests. In addition, at local and State levels, 4-H foundations raise substantial funds for camp construction and other nonrecurring type expenditures.

Extension funds were used, by program areas, in fiscal 1978 as shown in table 3, and a range of percentage of Federal funds in State budgets from 1954-1978 is shown in table 4.

Table 3. Funds Used by Program Areas, Fiscal Year 1978

| Area | Amount | Percentage |
|---|---|---|
| Agriculture and Natural Resources | $241.5 million | 38.4 |
| Home Economics and Nutrition | 176.1 million | 28.0 |
| 4-H and other youth work | 164.8 million | 26.2 |
| Community and Rural Development | 46.6 million | 7.4 |
| Total | $629.0 million | 100.0 |

Table 4. Range of Percentage of Federal Funds in State Budgets, 1954-1978 1/

| Year | High | Low | Average |
|---|---|---|---|
| 1954 | 55.6 | 17.1 | 36.0 |
| 1958 | 61.6 | 20.4 | 39.6 |
| 1963 | 62.6 | 19.1 | 37.6 |
| 1968 | 56.3 | 20.1 | 35.5 |
| 1973 | 65.6 | 27.3 | 42.9 |
| 1978 | 64.7 | 22.3 | 36.5 |

PERSONNEL AND STAFFING

There has been a gradual increase in the number of professional Extension workers from a total of 1,620 in 1914 to 16,831 in 1978 as shown in tables 5 and 6.

Table 5. Number of Professional Extension Workers, Fiscal Year 1978

| Staff | Number | Percentage |
|---|---|---|
| Federal Staff | | |
| SEA-Extension | 164 | 1 |
| State Staff | | |
| Directors and administrative personnel | 487 | 3 |
| Subject matter specialists | 3,410 | 20 |
| Area and County Staff | | |
| Program leaders and supervisors | 696 | 4 |
| Area agents | 732 | 4 |
| County agents | 11,342 | 68 |
| Total | 16,831 | 100 |

Table 6. Number of State and County Extension Workers, 1914-1978

| Year | Directors & Adm. Personnel | State Specialists | Total State Staff | Leaders and Supervisors | Area Agents | Co. Ext. Agents | Total County Staff | Total |
|---|---|---|---|---|---|---|---|---|
| 1914 | 50 | 221 | 271 | 112 | | 1,237 | 1,349 | 1,620 |
| 1918 | 115 | 512 | 627 | 575 | | 5,526 | 6,101 | 6,728 |
| 1928 | 106 | 1,004 | 1,110 | 376 | | 3,675 | 4,051 | 5,161 |
| 1938 | 131 | 1,551 | 1,682 | 493 | | 6,507 | 7,000 | 8,682 |
| 1948 | 159 | 1,933 | 2,092 | 596 | | 8,785 | 9,381 | 11,474 |
| 1958 | 217 | 2,554 | 2,771 | 754 | | 11,124 | 11,878 | 14,649 |
| 1968 | 295 | 3,850 | 4,145 | 695 | | 10,220 | 10,915 | 15,060 |
| 1978 | 487 | 3,410 | 3,897 | 696 | 732 | 11,342 | 12,770 | 16,831 |

Of the professional workers, only Federal Extension personnel and State directors and administrative personnel (4 percent) are not constantly interacting with the clientele served by the organization. Some 96 percent are working directly with clientele served by Extension.

More than 10,000 paraprofessionals or program aides are now employed in several programs, particularly in the Expanded Food and Nutrition Education Program, 4-H, and the small farm program. Also technicians assist the professional employees at the State level, particularly with field and laboratory work when the specialists are engaged in applied research or field tests and demonstrations.

The secretarial and clerical staff continues to be an important part of the personnel contingent. Secretaries respond to many of the less technical questions that come in through office visits by clientele or over the telephone.

Volunteer leaders are especially important in several program areas. In 1976 there were 573,615 volunteer leaders in the 4-H program and a similar number in the home economics program.

An estimated annual value of $550 million has been placed on the services rendered the program by the 4-H volunteers. In home economics and food and nutrition programs, volunteers from the homemaker clubs alone annually contribute an estimated 25,000 years of volunteer service.

Over the years, educational requirements for employment in the system have been increased. All professional positions now require a four-year college degree, with most program specialists and many administrative positions requiring graduate degrees.

For many years, a farm background and training in agriculture or home economics were required. The farm background is no longer required in most positions, and, particularly in 4-H and community and rural development, employees are being hired with education in areas other than agriculture and home economics. The majority of new employees, however, still come from the land-grant system.

## PROGRAM DEVELOPMENT

The Cooperative Extension Service conducts educational programs designed to result in the development of skills, attitudes, and understanding of people that will enable them to conserve and effectively use natural resources; efficiently produce range, farm, and forest products; increase effectiveness of the marketing-distribution system; optimize their development as individuals and as members of the family and community; improve their community organization, services, and environment; develop as informed leaders in a democratic society; and raise their level of living through wise resource management to achieve family goals.8/

In the early years of Extension, the main emphasis was on information and technology transfer for all types of programs--agriculture, home economics, and youth activities.

These are still important concerns but as the organization matured, attention was given to individual capacity building and leadership development.

As an educational function, capacity building consists primarily of helping individuals improve their decisionmaking capacity. This is defined as developing within each recipient a capacity which permits that individual to more effectively deal with or utilize additional information to solve similar or even new problems.

The placement of persons in leadership roles and training them for these roles have long been important parts of the Extension program. By the end of 1934, more than 4,000 Agricultural Adjustment Administration (AAA) advisory committees were in operation, and Extension agents and specialists had trained more than 70,000 people to serve on them. During World War II, Extension personnel trained a large number of citizen leaders who were made responsible for organizing their local communities and keeping their fellow citizens informed of the changing situation. According to the 1954 report of the Secretary of Agriculture, during the preceding 12 months, local leaders conducted meetings attended by more than 18 million people.

4-H members and Extension homemakers have long presided at and otherwise conducted their own monthly meetings, and now almost one-half of all Extension homemaker meetings are conducted without an Extension professional being present.

And across the country, thousands of "average" citizens have been encouraged to assume leadership roles in community development organizations, county livestock associations, and similar groups.

In many ways, Extension has facilitated the development of related institutions and programs and has helped citizens to gain access to those programs. In some counties and States, Extension is a formal participant in information and referral programs; in all cases, calls are received requesting help in finding the right agency or best source of information. For example, a community with a housing problem may want to know when and how to approach Farmers Home Administration (FmHA), Housing and Urban Development (HUD), Community Services Administration (CSA), State housing authorities, muncipal governments, environmental protection agencies, church groups, local housing organizations, and builders.

Extension seeks the involvement of people in the process of determining, planning, conducting, and evaluating programs that meet their needs. It has been assumed that people must be reached where they are in terms of their levels of interest and understanding. It is especially important to involve them in identifying their needs, concerns, and interests and to analyze problems that concern and affect them.

## FEDERAL-STATE-COUNTY INVOLVEMENT

Successful program development calls for an interaction of clientele, agents, specialists, supervisors, administrators, and advising and support groups--reflecting both local needs and national concerns. The interaction process involves both intermittent and continuous dialogue, negotiation, joint decisionmaking, and coordination among the people and their Extension committees, staff members, university departments, USDA and other departments, agencies, organizations, and relevant groups.

Influence comes from the Executive Branch and the Congress, officials of the USDA, Extension advisory committees, and interested special interest groups. These groups, collectively or singularly, enumerate what they perceive to be national problems or concerns. On at least three occasions--two world wars and the advent of the Agricultural Adjustment Act in 1933--work has been directed at these national concerns almost to the exclusion of all other activities.

At the State level, programs are influenced by administrators of the land-grant institution, State Extension directors, State Extension advisory committees, State executives and legislative bodies, other agencies and institutions, and commodity groups.

Program influence can be indirect, such as a statement of policy or suggestion, or direct by the allocation of funds to areas of work to particular programs.

At the county level, the county staff members have input into program direction, and the influence from local officials and leaders can have significant impact.

When all of these inputs are considered, the county program should reflect the concerns at Federal, State, and local levels.

## STATE AND NATIONAL PLANS

There have been national committees assigned to chart the future of the organization. Two are cited here. The "Scope Report" of 1958 called for programing in several areas--efficiency in agricultural production; marketing, distribution, and utilization of farm products; conservation, wise use and development of natural resources; management on the farm and in the home; family living; youth development; leadership development; community improvement and resource development; and public affairs.

In 1968 "A People and a Spirit: A Report of the Joint USDA-National Association of State Universities and Land-Grant Colleges' Extension Study Committee," updated the "Scope Report" and supported the importance of work on social and economic problems.

Several States systematically develop long-range plans, often for 5-year periods. Program goals and outcomes are set by both State and county committees, with advisory groups of local people usually involved at both levels. These programs identify problems and the goals set will include farm income, practice adoption, volunteer leader and clientele recruitment, and program areas to be covered. In one State, more than 10,000 people were involved in developing such a long-range program.

## LEVELS OF PROGRAMING

Extension programing can be defined at several levels. There are those activities that are developed and carried out completely by the Extension organization, using the resources of the organization.

In certain activities, Extension's responsibility extends only to informing people about program opportunities or where they might get help. For example, in each county office, there is likely to be a catalog and literature on the State's land-grant institution, and the agents are likely to answer questions from time to time concerning entrance requirements, programs, costs of a particular school.

Extension also cooperates with other groups and organizations to carry out programs. When Extension was established to conduct educational programs with rural populations, it interacted primarily with organizations having agrarian concerns. As the work shifted to more urban and suburban areas, Extension workers began more and more to interact with organizations having other relevant concerns.

In a recent study in Massachusetts, 47 agents cited 2,861 contacts with different organizations in a 1-year period with an average of 60 organizations per Extension worker.9/ The types of organizations were placed in the categories shown in table 7.

Table 7. Contacts with Organizations During a One-Year Period by County Agents in a Massachusetts Study, By Type of Organization

| Type of Organization | Times Mentioned | Percentage |
|---|---|---|
| Business | 412 | 14.4 |
| Education | 352 | 12.3 |
| Natural Resource | 285 | 10.0 |
| Government | 259 | 9.1 |
| Social Service | 244 | 8.5 |
| Agriculture | 201 | 7.0 |
| Media | 201 | 7.0 |
| Community Development | 184 | 6.4 |
| Religious | 168 | 5.9 |
| Cultural | 129 | 4.5 |
| Health | 125 | 4.4 |
| Leisure | 118 | 4.1 |
| Employment | 70 | 2.4 |
| Youth | 46 | 1.6 |
| Charitable | 22 | .8 |
| Fraternal | 19 | .7 |
| Consumer Protection | 17 | .6 |
| Legal | 9 | .3 |
| Total | 2,861 | 100.0 |

The home economics agents worked with more organizations than the other programs, followed by agriculture, community and rural development, and 4-H.

In agriculture and natural resources, a 1979 listing indicates cooperative programs with 22 USDA agencies, 45 agencies and commissions outside of USDA in 11 departments, and approximately 200 national organizations and professional societies.

However, despite all plans that might be developed, at whatever level, about half of the average county agent's time is spent in responding to calls for help from local citizens. One State survey indicated that each day there was an average of more than 100 calls to each county office. Some of these callers could be satisfied with a verbal response to a simple question or a bulletin placed in the mail. Others would require a visit to the farm or the home of the caller--a visit that could take one hour or more.

According to one observer, Extension's information role is as follows: "County agricultural agents are used, most often but not always, as the farmer's initial contact, thus serving as an entry point to Extension/university services. The agent is, so to speak, the organizational presence of the system at the local level. County agricultural agents organize meetings, play a coordinating role when certain emergencies develop (drought, hail, insect investigation), and refer clients to services outside Extension's scope of activity. This pattern seems to imply that the county staffs may be becoming more important to the process of information transfer and education than they are to the actual content--for example, acting as a linkage with sources of information and assistance."10/

NOTES

1. John W. Jenkins, *Historical Overview of Extension*, 1979, p. 5.

2. Atheal Pierce and Edward L. Askew, *An Overview of Extension Work at 1890 Institutions and Tuskegee Institute from 1906 to 1965*, 1979, p. 29.

3. J. Neil Raudabaugh and Torlief S. Aasheim, *Extension Program Development*, 1979, Section B, pp. 23-24.

4. Robert Evenson, *The Economic Consequences of Agricultural Extension Services*. Yale University, 1979.

5. Raudabaugh and Aasheim, op. cit., Section B, p. 4.

6. Gregory Thomas, *1890 Cooperative Extension Evaluation Report*, 1979, p. 13.

7. Ibid., p. 64.

8. Raudabaugh and Aasheim, op. cit., Section D, pp. 1-2.

9. Susan J. Uhlinger, *Boundary Spanning in the Cooperative Extension Service*. University of Massachusetts, Amherst, 1979.

10. Susan DeMarco, Consultant, Austin, Texas, *County Visits*, 1979, p. 23.

# III.
# Agriculture and Natural Resources

## III. AGRICULTURE AND NATURAL RESOURCES

### PROGRAM DESCRIPTION

The Cooperative Extension Service agriculture and natural resources (ANR) program, throughout its history, has been concerned with agricultural production, marketing, and business management programs. To a lesser degree, it has dealt with natural resource programs. ANR is the largest program area within the Cooperative Extension system. Nationwide about 40 percent of the time of professional staff and 36 percent of the total Cooperative Extension budget have been allocated to this program area in recent years.

### PROGRAM GOALS AND MISSIONS

The ANR area is a broadly defined set of programs and activities providing informal educational and related problem-solving assistance to producers, business firms, consumers, and others dealing with subjects related to agricultural production and distribution, including related natural resource management and utilization matters. Major goals of ANR Extension from a national perspective are to:

(1) Assist agricultural producers, suppliers, processors, wholesalers and retailers, foresters, forest land owners, and others engaged in agriculture, forestry, and related endeavors to meet the food, fiber, and shelter needs of the nation; develop and maintain the U. S. comparative advantage in world trade; and receive a fair share of the economic and social benefits.

(2) Conserve and develop natural resources with special emphasis on soil, water, and energy.*

(3) Protect the quality of the environment from pollution by agricultural wastes and chemicals used in food and fiber production.

(4) Enhance the ability of farmers and farm families to utilize available resources to improve their quality of life.

*In recognition of Public Law 95-306 (The Renewable Resources Extension Act of 1978), agriculture and natural resources were organized into two separate units in the Federal Science and Education Administration-Extension staff in 1979. This was done to provide strengthened national leadership for the Extension mission concerning the conservation and management of renewable natural resources on private forest land and rangelands and to stimulate natural resource programs in the States.

(5) Contribute to improved quality of living through assistance with home gardening and horticultural problems, emergency preparedness, safety, and other matters.

(6) Help farmers and others involved in agriculture to understand and adjust to current Federal, State, and local government programs and regulations; and to increase public understanding of the importance of a strong and viable agriculture.

Priorities among these broad goals vary from time to time and place to place depending on existing problems, opportunities, and needs. The ANR program area includes hundreds of specific State and local programs and projects, each of which generally has specific goals and objectives that address particular problems and needs. In addition, a few Federally earmarked programs such as farm safety, integrated pest management, and urban gardening have been funded from time to time to address specific national objectives and perceived needs.

Although the term "informal education" is broad and best defines the major or overall function of the Cooperative Extension Service, it does not fully describe the range of functions actually performed. For purposes of this report, major categories of ANR Extension program roles or functions are outlined to provide additional insights. These functions are:

(1) Collecting, interpreting, and disseminating information and knowledge through an information system linking farmers and other clientele with the research and knowledge base of the land-grant universities, the U. S. Department of Agriculture, and other government agencies.

(2) Teaching skills and principles and providing other assistance to facilitate developing clientele (individual and group) capacities for problem solving.

(3) Providing services to clientele including identifying and diagnosing problems, formulating or recommending alternative solutions to clientele problems, referring or giving other aid enabling clientele to identify and utilize additional (public and private) sources of assistance.

In practice ANR Extension activities frequently involve aspects of all three of these functions.

## STRUCTURE AND PROGRAM STAFF

A Federal Extension staff of about 28 professionals in the USDA, Science and Education Administration provides coordination, planning, leadership, and liaison with other government agencies, commodity groups, and organizations and their ANR counterparts in the States. Many of the problems and issues faced by Extension personnel cut across traditional Federal agency programs and lines; the need for planning and coordination at the Federal level remains important.

In the States, 3,371 specialists provide primary support and leadership to 3,938 area and county staff with primary responsibilities for ANR programs as well as linkage with teaching and research programs on university campuses and USDA

research facilities. Delivery of ANR programs is primarily focused at the county level with all other staff furnishing technical subject matter support and assistance in program planning, implementation, and evaluation.

Table 1. Professional Staff with Primary Responsibility in Agriculture and Natural Resources, 1978[a]

| Staff | Number | Percentage |
|---|---|---|
| State | 3,371 | 45.9 |
| Area (multicounty) | 741 | 10.1 |
| County | 3,197 | 43.6 |
| National | 28 | 0.4 |
| Total | 7,337 | 100.0 |

[a]Includes some professional staff with less than full-time assignments to ANR. Excludes more than 525 paraprofessional staff largely located at the county level.

PROGRAM CONTENT

Fiscal 1978 data indicate professional staff years spent in major subject matter components as shown in table 2.

Table 2. Staff Years Expended in ANR Fiscal Year 1978 by Program Components[a]

| Component | Staff Years | | | Percentage of Total |
|---|---|---|---|---|
| | State and Local | Federal | Total | |
| Crop Production | 3176.8 | 6.2 | 3183 | 44.6 |
| Livestock Production | 1587.9 | 4.1 | 1592 | 22.3 |
| Business Management and Economics | 846.5 | 2.5 | 849 | 11.9 |
| Agricultural Marketing Farm Supplies | 481.2 | 6.8 | 488 | 6.9 |
| Mechanical Science Technology and Engineering | 82.8 | 3.2 | 86 | 1.2 |
| Natural Resources and Environment | 465.9 | 3.1 | 469 | 6.6 |
| Safety | 116.1 | 1.9 | 118 | 1.7 |
| Other[b] | 347.8 | .2 | 348 | 4.8 |
| Total | 7105.0 | 28.0 | 7133 | 100.0 |

[a]Based on State annual statistical reports as reported in "National Summary of Extension Level of Effort for Fiscal Year 78," table 78.5, p. 6. Includes professional staff time expended at county, area, and State levels -- including both 1862 and 1890 institutions and Tuskegee Institute. One staff year is the equivalent of one person working full-time for a full year.

[b]Includes work in housing and home environment, food and nutrition, family resource management, family life, organizational development, leadership development, economic and career development, community planning, community services, and government operations and finance.

The majority of the program effort involves work with the technical problems of producing farm, horticulture, and forestry products and the organization and management of such agricultural enterprises. This includes work with the full range of problems associated with agricultural production including crop and livestock production technology, management and conservation of soil and water resources, energy conservation and production, and environmental quality.

About two-thirds (67 percent) of the ANR professional staff time in recent years has been allocated to activities related to crop and livestock production, 12 percent to farm and business management, and 7 percent to marketing and farm supplies. The majority of this work is directly or indirectly related to the efficiency of agricultural production and distribution.

Crop and livestock production activities include work with technical problems and production such as animal breeding, feeding, soil fertility, crop planting and harvesting, pest control, and grain handling facilities.

Farm management Extension includes work with the problems of farm business organization, planning, and management decisions.

Work with individual foresters and other natural resource managers on problems not directly associated with agricultural production has been a minor portion of the program nationally. However, significant programs in renewable natural resource production and management have been conducted in a few States where forestry and other nonagricultural natural resource utilization enterprises are relatively important and where effective research programs in forestry, wildlife, and related areas have been available.

Agricultural Extension programs involve a wide array of marketing-related activities, including a substantial amount of work to provide market outlook information and education programs on marketing strategies and principles to producers. The largest portion of this effort is devoted to producer marketing problems. Work with off-farm food and fiber processing and distribution constitutes a minor portion of this effort. The magnitude of the marketing work has declined slightly since 1975 when special Federal matching funds previously available were no longer provided on a separate basis.

## CLIENTELE IDENTIFICATION

Agricultural producers are the primary client group. Extension is particularly effective as a source of production information to commercial farmers and natural resource managers. But the evidence indicates that the program also often is used by other groups. Growing demands from small farmers, home gardeners, and other non-farm people, as well as demands for assistance with marketing and other problems, constitute current challenges to the program.

The evidence of clientele contact with and use of ANR Extension information is a necessary but not sufficient basis for determining the program's effectiveness in achieving the economic and social consequences indicated by its goals and missions.

According to a recent study 1/ of county agent job activities, a major role of ANR Extension is responding to requests for information and technical assistance from clientele. Broad client groups that are potential recipients of ANR program assistance include agricultural producers; agribusiness firms, suppliers, and consultants; public agents; farm organizations; urban and suburban citizens involved in gardening and agriculturally related activities; and mass media representatives.

Significant changes in this target population have occurred over the years. The total number of farms declined from about 3.0 million in 1969 to 2.7 million in 1977. During the same period, total farm population declined from 10.3 to 7.8 million, or down to 3.6 percent of the total U. S. population.

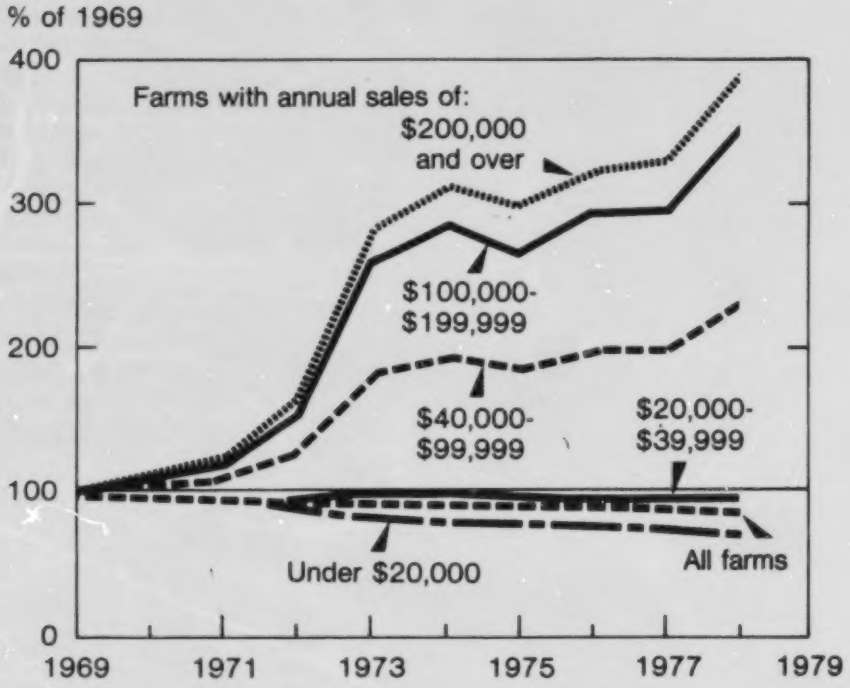
Farms also have become larger. Small farms (gross sales below $20,000) constituted 79.7 percent of the farms in 1969 and 65.4 percent in 1974, as some small farm operators have left farming and others have increased their sales. The number of large-sized commercial farms has increased. Those with more than $100,000 sales increased from 52,000 in 1969 to 153,000 in 1974.

Although the tendency for many years has been for the number of farmers to decrease, there are a number of new and often young people entering the full or part-time farming business. Some have neither a farm background nor training and are in special need for educational assistance.

Figure 1 illustrates the dramatic growth of large-sized commercial farms since 1969.

Figure 1.

**Percent Change in Farms by Size of Sales**




Source: "1979 Handbook of Agricultural Charts", Page 6, Chart 4.

The ANR program reached about two-thirds of the agricultural producers during 1978 on a direct contact basis (excluding information relayed through the mass media), according to estimates provided by county agents from a random sample of 562 U. S. counties. The program reached a larger percentage of the commercial-sized farming operations (more than $40,000 gross sales) than the small-sized farms. However, larger actual numbers of farmers with sales under $40,000 were reached.

Estimated Percentage of Farmers Within Sales Categories Reached By ANR Extension in 1978

| Value of Agricultural Products | Percentage Reached |
|---|---|
| $1,000,000 and over | 76 |
| $100,000 to 999,999 | 82 |
| $40,000 to 99,999 | 76 |
| $20,000 to 39,999 | 74 |
| $2,500 to 19,999 | 69 |
| Less than $2,500 | 49 |

According to 1977 data from the Bureau of Census, the composition of the U. S. farm population by racial-ethnic groupings is as follows: white, 94 percent; black, 5 percent; and Spanish origins and others, 1 percent. The racial-ethnic composition of clientele contacts with the ANR program nationwide is similar.

Extension data for 1978 on number of direct client contacts within the ANR program indicate about 90.4 percent of the contacts were with whites, 6.2 percent with blacks, 2.1 percent with Hispanics, 0.3 percent with American Indians, 0.3 percent with Orientals, and 0.7 percent with others. (These data include contact with some nonfarm as well as farm audiences. Data also are based on numbers of contacts, not numbers of different individuals who had contact with the program.)

Data on participation by members of racial-ethnic groups in active councils, boards, and committees that assist in organizing, planning, conducting, and evaluating ANR programs indicate participation by the various racial-ethnic groups at the county level is in approximate proportion to the composition of the farm population. Representation at area and State levels is not as balanced in that minorities constituted slightly less than 3 percent of membership of such groups in 1978.

Based on county agent estimates of the amount of county professional staff time allocated to the different client groups, about 55 percent of their effort went to farmers in 1978. About 34 percent was for farmers with more than $20,000 sales and 21 percent for farmers with smaller operations.

## AGRIBUSINESS AND RELATED SERVICES

Agriculturally related businesses that provide supplies and services to farm producers and market agricultural products constitute a major portion of the nation's agricultural economy. These private business firms often provide consultant and informational services in conjunction with selling a product or service and are a major source of information on production technology, marketing, and management for farmers and producers.

According to a recent estimate, there may be approximately 27,300 staff years devoted to "private" Extension work in the United States.2/ In contrast, about 7,133 professional staff years were devoted to ANR Extension nationwide in 1978. ANR staffs provide technical education and information to members of this client group. For example, county agent estimates indicate about 56 percent of the consultants were reached by the program in 1978. Extension recognizes that by working with the private sector in this way, technical information will be disseminated more widely and rapidly than if Extension staffs work exclusively with producers. This "wholesaling" or "multiplier" technique also is used with the mass media.

## PUBLIC AGENCIES

Public agencies also become distributors and users of Extension information and cooperators in programs of joint responsibility and interest. Cooperative efforts result in the additional dissemination and use of agricultural information and leadership development and assist these agencies in implementing programs for which they are responsible.

A survey of ANR Extension staff at the Federal level in May 1979 indicated cooperative program work with 22 USDA agencies, 45 agencies and commissions outside of USDA in 11 departments, and approximately 200 national organizations and professional societies.

In a survey conducted as part of this evaluation, personnel in cooperating agencies gave three reasons, in order of priority, for contact and work with Extension at the Federal, State, or local level: (1) to develop and work on programs in which both organizations are involved, (2) to discuss problems of mutual concern, and (3) to exchange information.

## FARM ORGANIZATIONS AND AGRICULTURAL LEADERS

ANR Extension works with and through farm organizations such as the Grange, Farm Bureau, Farmers Union, National Farmers Organization, American Agricultural Movement, and various commodity organizations. These and similar organizations may exist at each of the Federal, State, and county levels.

Extension staffs provide factual information on topics of interest to the organization membership, conduct educational programs, and help develop leadership capabilities within the organization.

## URBAN AND SUBURBAN CITIZENS

A relatively new clientele for ANR Extension is urban and suburban gardeners. The increased interest in gardening during the past 10 years--especially in vegetable and fruit production for home consumption and home preservation--has overtaxed the county staffs in many urban counties. Although ANR staffs are serving large numbers, the potential audience is extremely large.

Mass media delivery, although useful, frequently increases the demand for one-to-one contact. Volunteers and paraprofessionals are helping meet this demand. County agent estimates indicate nearly 12 percent of the adult population in towns of 10,000-49,999 and 6 percent in cities of more than 300,000 were reached in 1978. Agents also say that about 11 percent of their time is allocated to home gardeners and other nonagricultural, nonrural audiences.

## TEACHING METHODS USED

Extension has contributed to increased efficiency and productivity by encouraging the adoption of new or improved technology on farms. It has improved technical, managerial, and other skills of farmers and provided information to farmers to assist them in solving their production and management problems. This involves the interpretation and dissemination of information about the results of research and development activities, primarily of the agriculture experiment stations and the USDA.

Farmers are made aware of new technologies through demonstrations, field tests, and experiments to evaluate the applicability of new techniques and varieties to local conditions, to develop minor modifications to fit local needs, and to develop educational programs to help farmers learn the practical value of these techniques and to encourage their adoption.

Methods used to transfer information, develop leadership activities, and perform other functions to reach and serve clientele include mass media bulletins and publications, meetings, demonstration plots, tours, individual office and farm visits and calls, and guided participation in organizational meetings and other leadership development activities.

Studies of farmers' sources of information and Extension delivery methods indicate that ANR Extension staff and activities are a primary direct source for technical production information. Farm magazines and agribusiness sources also rank high. For marketing information (particularly prices), mass media outlets, dealers, elevator operators, salespersons, and buyers are the primary sources.

Most studies of farmers' information sources indicate about 40-50 percent of farmers use Extension bulletins. Usage rates for other major methods of direct contact with Extension are about the same. A survey of 933 Iowa farm families indicated operators of large farms used Extension information somewhat more frequently than operators of small farmers. They also utilized most other sources more frequently, indicating that the demand for information tends to increase with size of farm.3/

A 1978 national survey of commercial family farmers found that Extension and universities were reported most frequently as the major source of farmers' production information, but were ranked lower as source of farm business management, marketing, and farm policy information.4/ The farmers surveyed indicated greater needs for additional marketing information than for additional production information. This study found that, in general, farmers report information sources from which they receive the message and not who generated the message. Extension's indirect contribution to the flow of information to farmers and others by providing information to the press and by training business and agency personnel largely goes unnoticed.*

The extent of ANR Extension's indirect contribution to the flow of information to its clients is highlighted in a special study of farm magazines.5/ More than 21 percent of all column inches of news copy appearing in 147 randomly selected issues of 38 farm magazines in 1978 was attributed to land-grant university sources. Extension sources provided 29,800 column inches or 66 percent of the total from land-grant sources. Extension information accounted for 14 percent of all news copy and appeared in 20 percent of all items carried in the farm magazines sampled. Readership data from 14 magazines indicated about 40 percent of the readers thoroughly read articles based on Extension information and about 45 percent partially read them. The 38 magazines reviewed were estimated to reach about 1.9 million farmers or roughly 81 percent of the nation's farmers with sales of $1,000 or more.

Radio, TV, and newspapers also relay significant amounts of Extension information, according to other studies. In total, ANR Extension information reaches a majority of the nation's farmers through indirect delivery methods.

## IMPACT ON AGRICULTURAL PRODUCTIVITY

The largest single justification for ANR Extension has been that it facilitates more rapid and complete adoption of new or existing production technology (knowledge and practices). Its performance of this role has had significant impact on the growth of agricultural productivity, distribution, economic and social benefits, and costs among the farm population, food and fiber consumers, and other segments of the economy.

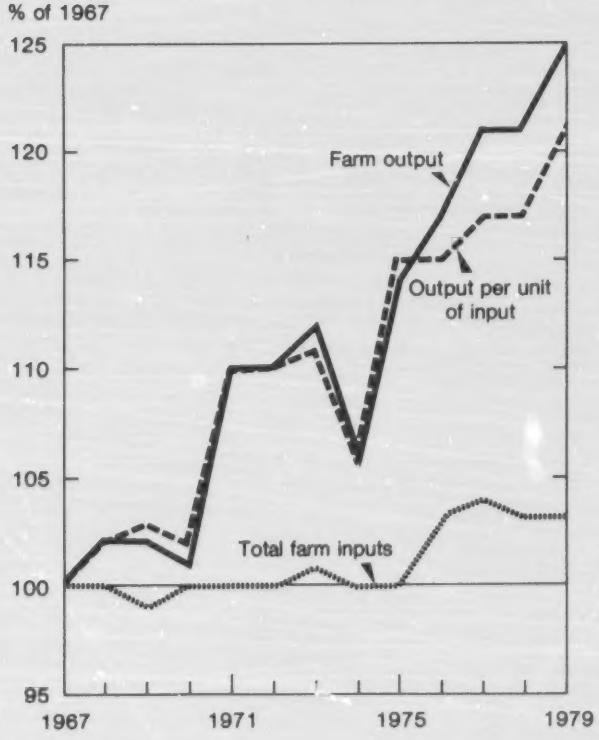
*Extension itself serves as both a source and a generator of information. Information developed and provided by Extension is largely based on agricultural data, basic information, and research results from the USDA, other State and Federal agencies, and university research.

Productivity gains in U. S. agriculture have long been relatively rapid in relation to many other sectors of the economy. These long-term increases in farm product output per unit of input are to a large degree the result of new technology embodied in modern farming practices, production inputs, and managerial skills that have substantially increased efficiency in converting resources into farm output.

Farm productivity growth, in terms of output per unit of input since 1967, is shown in figure 2.

Figure 2.

**Farm Productivity**




1979 Preliminary

Source: "1979 Handbook of Agricultural Charts", Page 23, Chart 39.

## CHANGES IN PRODUCTIVITY AND EFFICIENCY

Several economic studies have indicated that publicly supported research and Extension efforts of the USDA and the land-grant universities have made major contributions to the rate of technological change in agriculture. An American Agricultural Economics Association sponsored review of the major agricultural economics literature from World War II through the early 1970's suggests that about one-third of the productivity growth in agriculture can be attributed to each of three major sources--public investments in research and Extension, changes in quality of inputs, and economies of scale in farm production.6/

A more recent analysis by Robert Evenson, Yale University, of the 1948-1971 period, indicated that public sector agricultural research, Extension, and level of education of farmers together may "account" for nearly 50 percent of the agricultural productivity increase during the period.7/

Results of this study suggest that Extension's contribution to productivity growth associated with technical change has been substantial and that its effect comes through its complementarity with research. That is, Extension's contribution is heavily dependent upon the flow of potentially valuable new technologies from agricultural research. Extension facilitates more rapid and complete adoption of new technologies developed by research.

It also has been argued that the high productivity of the U. S. agricultural research system over the years has been facilitated by Extension and other channels for the articulation of farmer clientele needs and demands for new information and technology.

In addition to contributing to technical efficiency which increases agricultural output from the inputs utilized in farm production, Extension and formal education have contributed to increased economic efficiency. This has been done by facilitating farmers' decisionmaking skills and abilities to make improved and more rapid resource allocation adjustments in response to changing prices and other conditions.

Improvements in allocative efficiency can enhance the economic efficiency or the productivity of agriculture, even in the absence of new production technology, when other factors lead to changing prices and opportunities.

Recent studies have indicated that both agricultural Extension and formal education have contributed significantly to improved allocative efficiency in agricultural production through enhancement of producers' analytical, decisionmaking, and management capabilities.8/ This effect, in essence, is separate from Extension's impact on technical efficiency which comes through making knowledge about physical production technology more readily available to producers. In practice these two effects interact in determining Extension's total contribution to agricultural production efficiency.

Extension's role and relative contribution toward the overall productive efficiency of U. S. agriculture has been reduced somewhat by longrun trends toward fewer but larger farms with a relatively small percentage of the farms accounting for most of the total agricultural output, rising educational levels of farmers, and increasing availability of technological and related information from private sources.

Growth in the provision of new technology and information by private firms has generated some increased demand by farmers for Extension to function as an objective reference in assisting farmers to evaluate information received from alternative sources. Also, while private services--such as input suppliers, consultants, marketing firms, and news media--have become significant alternative sources of information for farmers, many of these private sector services have in turn become important clients of ANR Extension and transmit substantial amounts of Extension-developed information to their farmer customers.

At the same time, the increasing complexity and the dynamic adjustments required to maintain efficient production have increased the importance of information and managerial skills for large commercial farm operators and for those small farm operators who rely heavily on their farm earnings. These factors tend to increase farmers' demands or needs for information and assistance from Extension as well as from other sources.

## ECONOMIC RETURNS FOR PUBLIC INVESTMENT

Several studies of the contributions of research, Extension, and education to agricultural productive efficiency have attempted to compute a measure of the economic returns to public investments in these activities. They have fairly consistently reported substantial net gains to the economy. "Internal" rates of return of about 30 to 60 percent frequently have been reported. Many studies have measured the returns to agricultural research and Extension combined. Recent studies by Wallace Huffman, Iowa State University, and others attempting to measure separately the impact of agricultural programs of Cooperative Extension on agricultural productivity and resource allocation efficiency suggest that rates of return to Extension alone may be in the same ranges as those to agricultural research.

Evenson's (1978) statistical analysis, referred to earlier, also indicated that marginal rates of return to research and to Extension were similar.

Returns to public investments in Extension's agricultural program have been calculated based on the value of additional agricultural output estimated to result from marginal increase in Extension funding. These results indicate that an additional $1,000 invested in agricultural Extension in a given year would yield benefits of $1,086 in the first following year, $543 in the second year, $271 in the third, and so on.9/ This is a substantial return, particularly because most of the benefits are realized within 2 to 3 years.

Similar estimates for agricultural research indicate larger annual impacts over longer time periods; however, a lag period of several years exists between the initial investment in research and the resulting payoff. As a consequence, the estimated rates of return to investments in agricultural Extension and research were about the same.

The return to Extension was related to the level of investment in research. Increased (decreased) investment in research would increase (decrease) the returns to Extension. Similar, but less pronounced, complementarity between investment in Extension and returns to research also was found.

There is some evidence that returns from production-oriented agricultural research and Extension may have declined slightly over the past 30 years. This is because of many factors, among them the increasing costs and complexities of agricultural research and development.

Future economic returns to production-oriented agricultural research and Extension will depend in part on the world food supply and demand situation. A strong world demand for the products of America's farms will increase farm incomes, and consequently the research and Extension programs that assure the farmer's ability to produce high volume will be worth more.

None of the mentioned studies provides measures of economic returns to all of Extension's agricultural programs. The economic gains measured are largely exclusive of secondary economic effects (both positive and negative) of the improvements in agricultural production efficiency.

## MAJOR ECONOMIC AND SOCIAL CONSEQUENCES

ANR Extension work has produced a number of economic and social consequences of national significance. The most significant consequences are those resulting from Extension's contribution to the productivity and efficiency of U. S. agriculture. This has affected the supply and price of food for consumers, farm income, and agriculture's capacity to contribute to national economic growth and prosperity. The process of change in the technology and the economic organization of agriculture also has been associated with changes in socioeconomic conditions in rural communities, natural resource use, and environmental conditions.

Agricultural Extension has both contributed to these changes and responded to many of the associated problems and side effects. Over time the program has dealt with an increasingly broad range of agricultural and natural resource problems, as a result.

While it is difficult to sort out the full effects of ANR Extension information and education from the myriad of forces that have affected this process of change in American agriculture and its consequences, a variety of analyses have been conducted and assessed to identify significant consequences of ANR Extension. An overview of some key results follows.

### FOOD AND FIBER SUPPLIES

Improvements in agricultural productivity and efficiency have enabled U. S. producers to expand the crop and livestock output from their land, labor, capital, and other inputs. This means that increased supplies of food and fiber at lower per unit costs of production have been made possible by the advances in agricultural production, marketing, and management technologies; by the increasing skills of farmers and agribusiness persons; and by other factors that have enhanced the growth in agricultural production efficiency.

Research, development, and related efforts of farm equipment manufacturers, agricultural chemical companies, and other agribusiness industries that supply and service agricultural producers and process and distribute their output also have been major contributors.

## CONSEQUENCES FOR CONSUMERS

Consumers have long been major indirect beneficiaries of ANR Extension work, primarily through its effect on increasing production efficiency. This has helped reduce direct per unit costs of producing farm commodities, and this enhances the growth in supplies of food and fiber. The resulting lower prices for farm products, relative to what they would have been without improvements in productive efficiency, have reduced or at least moderated the rate of increase of consumer food and fiber prices. However, in recent years growing export demands and rising costs of food processing and distribution have become increasingly important determinants of food price levels.

Because expenditures for food constitute a basic and significant proportion of consumer expenditures, the longrun, anti-inflationary impact of agricultural Extension and research on food prices has contributed to the economic well-being of consumers over much of the post World War II period. And because low-income families tend to spend a significantly higher percentage of their income for food than do high-income families, this food price reduction effect has enhanced the real income of low-income people relatively more than it has for upper-income people.

Magnitude of the benefits to U. S. consumers from agricultural research and Extension is indicated by a recent study that estimated the potential impacts of 10 percent reduction in public expenditure on agricultural research and Extension over the years 1980 to 2000. 10/ This analysis indicated that the growth rate in agricultural productivity would decline, farm output would be slightly lower, and consumer food prices would be higher with the reduced level of public research and Extension. Over the 20-year period, U. S. consumers would pay $14.4 billion more for food compared to a savings of $3.6 billion in reduced government expenditures for agricultural research and Extension.

For a typical family of four with an annual income of $20,000 who spends $3,670 per year for food, the cumulative impact over the 20-year period would be an increase in food costs of about $217 compared to a potential savings in tax payments of $39 to support research and Extension. The potential net loss for such a family over the period is equivalent to 0.9 percent of one year's income.

Similar calculations for a family of four with a $10,000 annual income indicate the difference between the increase in food costs and the potential reduction in their proportionate share of Federal expenditures over the 20-year period is equal to about 1.25 percent of one year's income (or $125).

## IMPACT ON FARM INCOME

The effect of increased farm productivity on farm prices tends to reduce national farm income. However, by adopting cost-reducing technologies and practices, many producers still can maintain or increase their net farm incomes.

During the 1950's and 1960's, when the rate of productivity increase was substantial in relation to the rate of growth in demand for farm products, farm prices were reduced substantially (because of the "inelastic" demand for farm products). Total national gross farm income fell and individual producers were hard pressed to increase their efficiency enough to maintain or to increase their net income.

During such periods, agricultural research and Extension's contribution to increased productivity probably had the effect of depressing aggregate farm income. However, during the 1970's, rapid increases and fluctuations in export demand have had substantial impacts on farm prices and income, but the depressing effect of increasing productivity has not been as evident during the 1970's decade.

Gains in production efficiency have contributed to the capacity of U. S. agriculture to meet and to benefit from growing export demands and to successfully compete with other food exporters.

Various studies at the State and county level have demonstrated that specific agricultural Extension programs can help participants achieve increased farm incomes. For instance, a 1975 study of a special Missouri program for small farm operators found that participants increased their net farm income from $726 in 1971 to $1,513 in 1974 while a comparison group of nonparticipants with nearly equal sales in 1971 had net farm incomes that declined from $655 to $625 over the same time period.11/

Another analysis of changes in average net farm income per farm in the United States from 1964 to 1974 indicated a positive relationship between the level of ANR Extension activity (in a State or a region) and increases in average net farm income per farm over this period.12/ However, this analysis did not measure the effects on the income of those farmers who retired or quit farming.

In total, the evidence suggests that Extension assistance does help farmers improve their incomes by providing information and assistance to help them adapt to changing economic conditions. However, because of the effect of increasing agricultural productivity on farm product prices, agricultural producers do not capture all the benefits from agricultural research and Extension. And those farmers who do not adopt more efficient technology and adapt their practices to changing conditions may suffer from declining incomes or at least become economically disadvantaged relative to other producers.

Because Extension is by design responsive to clientele demands and relies on voluntary participation, those farmers least inclined to seek assistance have not been served as well as those who have been motivated and able to ask for and utilize the program.

## RESPONSES TO CHANGES IN AGRICULTURE

The long-run trend in U. S. agriculture has been towards fewer and larger farms and increasing concentration of farm income. Mechanization of production, adoption of other productivity enhancing and laborsaving technology, and availability of higher paying nonfarm jobs have contributed to a major reduction in the farm labor force over time.

At the same time, the nonfarm section of the economy producing inputs for farm production such as machinery, fertilizer, and chemicals and the processing and distribution of farm products has grown. Many complex factors have influenced these trends in the structure of agriculture and the distribution of farm income.

Reduction in the farm population, although less dramatic in the 1970's than in earlier years, has been particularly significant. For many years, the shift of labor from farm to nonfarm employment was a significant factor in increasing national economic growth. However, in some regions the reduction in farm population adversely affected the economic and social viability of many rural communities.

Some of the most disadvantaged of the families who left agricultural employment faced problems in finding and adjusting to nonfarm employment. In recent years, migration of nonfarm people to rural areas has generated new problems and opportunities in some regions.

Average annual net outmigration from the U. S. farm population by 6-year periods from 1920 through 1978 is shown in figure 3. ANR Extension has both contributed to and responded to those changing conditions.

## INCOME DISTRIBUTION AND STRUCTURE OF AGRICULTURE

By facilitating more rapid adoption of new technology, ANR Extension has accelerated the rate at which some of these basic changes in the nature and the structure of agriculture have occurred. However, by contributing to the more widespread distribution of new technology and knowledge, it probably has contributed to the ability of a somewhat larger number of family farmers to remain economically competitive than would have been able to had this assistance been less widely available.

A study commissioned by the evaluation project provided some evidence based on an analysis of 1974 data suggesting that agricultural research and Extension may have had approximately equal percentage effects on average net farm incomes for farms in larger gross income categories and for smaller farms.13/

Equal percentage effects would mean that the total dollar value of the increase in net farm income would be greater for farms with larger volume of sales. It also may imply that, on the average, knowledge and assistance provided by public agricultural research and Extension, to a large extent, have been equally applicable across all farm sizes. However, because Extension reaches a smaller proportion of small farms than it does of medium and large-sized farms, evidence of an equal percentage

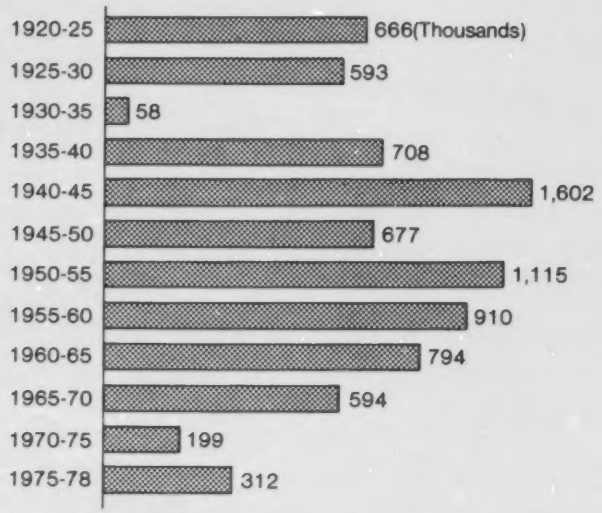
effect on average net income for all small farms suggests that it may have greater percentage effect on those small farms it works with than it does on the large farms it works with.

The same study also reported that rising wages in nonfarm (manufacturing) jobs had positive effects on the change in average net farm income and farm family income (from all sources) between 1964 and 1974. However, agricultural Extension appeared to diminish this effect by slowing the rate at which some farmers and their families shift to nonfarm jobs. Extension may have enabled or encouraged some farmers to remain in farming somewhat longer than they would have otherwise.

On balance, it appears that ANR Extension has not greatly altered the effects of new technology, national economic development, and other basic influences that have contributed to trends toward larger and fewer farms.

Figure 3.

**Annual Net Outmovement from the Farm Population**




Source: "1979 Handbook of Agricultural Charts", Page 37, Chart 68.

REACHING SMALL FARMERS

Different types of functional activities performed by Extension may have differing implications for income distribution among farmers. Simple dissemination of data or unprocessed information without attendant interpretation and educational efforts to facilitate its application may potentially aggravate income differences. This is because producers with greater skills and capabilities in interpreting and utilizing information are able to obtain the greatest benefit.

Extension information "wholesaled" through agribusiness firms and mass media is less likely to reach and be effectively utilized by the most disadvantaged producers.

Consequences of differing levels of education and Extension are demonstrated by a recent study of 1964 data on economic differences between black and white farmers in the South.14/ The results indicated that during the early 1960's, lower average levels of formal schooling and Extension assistance may have contributed to lower levels of productivity on farms operated by blacks in the South in comparison to those operated by whites. The difference in productivity was undoubtedly one reason why blacks left agriculture in the South at a faster rate than whites during the 1950's and the 1960's.

This study found, however, that Extension assistance partially compensated for the effects of lower levels of formal education. Partly for this reason, the results suggested that the potential contribution to increased productivity on individual farms from additional Extension assistance, beyond average levels provided at the time, was greater on black-operated farms than on farms operated by whites, who generally had higher levels of formal education and somewhat greater access to Extension assistance.

To provide the kind of intensive educational assistance needed by economically and educationally disadvantaged producers, modest but increasing efforts have been made in recent years to develop programs specifically targeted towards assistance of small, limited resource farmers, especially those who have not been active participants in regular Extension programs.

Several State Extension Services initially received special Federal funds to assist in development and evaluation of these programs. Twenty-one States now have programs of varying size using paraprofessionals to work intensively with small farm operators. Ten additional States also have programs designed specifically to serve small farmers. In several of the southern States, the 1890 land-grant universities have had key roles in these programs.

Evaluations of small farm programs in Texas, Missouri, and other States indicate these programs have effectively helped participants increase farm income and improve their level of living. For example, a 1976 evaluation conducted at Prairie View A & M University, Texas, found that 220 participants in a special small farm operator program using paraprofessional aides increased their average farm income from crops by 44 percent and income from livestock by 4 percent over the 1970 to 1974 period.*

*Prices for most major crops increased substantially over the 1970 to 1974 period. This price may account for much of the larger increase in crop as opposed to livestock income.

More than 99 percent of the participants indicated that the program had helped increase their knowledge of modern production and management practices, and many had adopted improved production practices. There was an increase of nearly 73 percent in the number of participants who contacted the Extension office for information. Program participants also increased their utilization of Soil Conservation Service, Farmers Home Administration, and other public programs.15/

However, as table 3 suggests, when Extension resources are limited, there may be a trade-off between pursuit of maximum effect on enhancing total productivity of the nation's (or a State's or a region's) agriculture and the pursuit of more equitable distribution of income for the operators of the smallest farms.

Experience has shown that it takes no more time to provide a given amount of assistance to a large producer than a small volume producer, and the total economic effect of the application of a new technique tends to increase with size of the production unit. Therefore, it follows that a greater impact on agricultural output may be achieved by working with larger farms.

## MARKETING, PROCESSING, AND DISTRIBUTION

The proportion of retail food costs accounted for by the price of farm products has declined substantially over time. In recent years, the farmer has received about 40 cents out of each dollar spent by the consumer for food at the retail store.

The increasing share of retail food prices accounted for by the costs of processing and distributing food products means that the efficiency and the performance of off-farm marketing sectors are becoming more important determinants of consumer food prices. Shifts in the marketing system and fluctuating commodity prices in the 1970's also have generated new marketing challenges and problems for farm producers.

Current evaluation efforts do not adequately assess the effectiveness of Extension activities in the marketing area, although the effects of marketing work with farmers were, at least, partially accounted for in the analysis of Extension's overall impact on farm income.

## SERVICES TO NONFARM CITIZENS

ANR Extension includes some educational work directly with consumers interested in agricultural issues and a significant amount of work with home gardeners.

The growing interest in home gardening, especially in urban and suburban areas over the past years, has generated substantial demands for educational programs and assistance in home garden production problems. Master gardener programs utilizing adult volunteers trained by Extension are being used in at least 25 States to meet the high demand for gardening information in heavily populated areas. This work contributed to increased home food production, enjoyment gained in gardening activity, and aesthetic quality of the environment.

Table 3. Percentage of Total Number of Farmers Reached by ANR Programs, by Farm Size

| Farm Size Category Gross Sales | Percentage of all Farms, 1977 | Percentage of Extension Farm Clients, 1978[a] | Percentage Total Cash Receipts From U. S. Farms 1977 |
|---|---|---|---|
| Under $20,000 | 69 | 46 | 11 |
| $20,000-39,999 | 12 | 20 | 11 |
| $40,000 and over | 19 | 34 | 78 |

[a]On a direct contact basis based on county agent estimates from a national sample of 562 counties.

A special urban gardening program aimed at low-income families in large central cities was initiated in 1977 with funds earmarked by Congress for New York City, Chicago, Los Angeles, Philadelphia, Detroit, and Houston. In fiscal 1978, $3 million was appropriated for these plus 10 additional large cities. This program, a joint effort by ANR, 4-H, and Expanded Food and Nutrition Education Program staffs, had more than 88,000 participants and produced some $2.6 million worth of vegetables in 1978. Program costs were about $34 and the value of vegetables produced was nearly $30 per participant in 1978.

An evaluation of the program in Detroit indicated perceived net cash savings from garden production averaging $40 per participating family.16/ Substantial intangible benefits in terms of increased community involvement, family and personal satisfaction, and increased nutritional knowledge have been generated by these programs.

## SERVICES TO NATURAL RESOURCE OWNERS AND USERS

Nonfarm citizens, as well as farmers, have been assisted by ANR Extension programs in forestry, rangeland, wildlife management, water resource management, and other natural resource subjects. Much of this work also is related to educational work in communitywide natural resource problems--land use, water management, outdoor recreation, and other issues--conducted through Extension community resource development programs.

ANR Extension work in forestry and related subjects has long been a small part of the program. But the pressures of increasing demands for timber products, energy resources, outdoor recreation, and water resource utilization have in recent years brought increasing attention to Extension educational efforts and their potentials.

Examples of new programs reported by various States include work on the use of wood and sawdust for fuel, training programs to reduce energy use and increase efficiency in kiln drying of wood products, and demonstration programs on increasing production of fish from farm ponds on small, low-income farms.

At the present time, national program plans for coordinated Extension activities concerned with renewable natural resource production, management, and utilization are being developed pursuant to P. L. 95-306 (The Renewable Resources Extension Act of 1978). This Act authorized separate funding for renewable resource Extension programs and requires submission of a five-year plan to the Congress in 1980. The plan will take into account resource needs identified in resource assessments and appraisals provided for by the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Soil and Water Resources Conservation Act of 1977.

A 1979 survey of 276 small woodland owners in 17 States demonstrated the perceived impact of Extension assistance in helping landowners increase the productivity of their woodlands.17/ Only 11 percent of program participants in this survey indicated that Extension had no effect on increasing efficiency or reducing costs. More than 53 percent indicated that Extension help had resulted in "much or very much" increase in investments in the management of their small woodlands.

Small woodland owners number about 4 million, control about 60 percent of the commercial forest lands in the United States, and annually provide about half of the total domestic timber harvest. But the level of management by woodland owners and investment by private owners on nonindustrial forest lands has been relatively low. These survey results, however, indicate Extension assistance has helped some small private woodland owners improve their woodland management and production.

## RELATIONSHIPS WITH OTHER PUBLIC AGENCIES AND RESPONSE TO NEW NATIONAL ENVIRONMENTAL QUALITY AND SAFETY PRIORITIES

Agricultural Extension, like other Extension programs, is heavily oriented toward responding to local clientele needs and demands. Strengths and limitations of the Cooperative Extension Service, as both a leader in anticipating and in responding to problems faced by its major clientele and as a responder to problems and priorities of a broad national concern, are illustrated by programs related to environmental quality and safety and its relationships with other public agencies responsible for dealing with the problems.

Over the past decade, new government programs and expanding regulations at all levels of government have had increasing impact on farmers, foresters, agricultural products processors, and others involved in agriculturally related pursuits. This has generated increasing demands from those affected for information and assistance in dealing with these expanded requirements. And it has presented Extension with new opportunities and added challenges to assist and complement other public agencies in addressing problems and broad national concern.

In some cases, earmarked Federal funds have been used to generate or encourage new or expanded special programs such as integrated pest management and farm safety programs. And public agencies charged with implementing new environmental and other regulatory programs have sought both agricultural advice from Extension and its assistance in reaching agricultural audiences with educational programs.

In addition to informal cooperation and exchange of information, the work with other agencies has resulted in some cases of provision of special (contract) funds for Extension programs to help farmers and others understand regulatory requirements and acquire the knowledge needed to be able to comply with them. Examples include work with the Environmental Protection Agency on pesticide applicator training programs and cooperative work with water pollution abatement programs.

These new relationships are in addition to Extension's longstanding relationships with other agricultural agencies of the USDA and the State Departments of Agriculture. Extension staff work closely and cooperatively with these other agricultural agencies. County Extension staff often are located in the same buildings as the county offices of other USDA agencies such as Agricultural Stabilization and Conservation, Soil Conservation Service, and Farmers Home Administration. Extension has helped keep farmers informed about assistance available for other agencies and, thereby, complements these agencies.

For example, an evaluation of the results of an Extension forestry program for small woodlot owners in Tennessee found that 98 percent of the program participants, but only 33 percent of a nonparticipating comparison group, were aware of the special Agricultural Stabilization and Conservation incentive program for timber improvement practices.18/ Evaluation of special small farm programs has shown increased use by program participants of assistance from other government agencies.

Extension has been helpful in increasing awareness of and acceptability of other agencies' programs, in part because of its "grassroots" credibility. However, the high degree of local and State autonomy in program planning and delivery which helps Extension maintain this quality also places limits on its role in relation to other government programs.

ANR Extension does not provide for "top down" dissemination of information or promotion of the programs of other agencies. It does, however, provide a strong grassroots education capability to help farmers and other citizens increase their awareness and understanding of such programs.

Three illustrative examples of ANR programs that have involved special national funding and cooperation with other agencies follow. They illustrate how ongoing efforts and existing capabilities of Extension have been built upon to address new problems of national concern.

*The Pesticide Applicator Training Program* illustrates Extension's capability to provide educational programs that complement the missions of other government agencies. The amended Federal Insecticide/Fungicide/Rodenticide Act (FIFRA) requires "certification" of commercial and private pesticide applicators who use restricted-use pesticides. These requirements are administered by the Environmental Protection Agency (EPA) and State regulatory agencies.

The Cooperative Extension Service was identified as the logical organization to develop and to provide educational programs to train pesticide applicators, because Extension had provided pesticide use and safety use information for years. And in many States, Extension helped the State regulatory agencies develop certification procedures. Through special arrangements with EPA, Extension has trained 287,718 commercial applicators and 1,359,575 private pesticide applicators in all States as of September 30, 1979. The program was financed in part through special funds from

EPA. Initial clientele resistance to EPA regulations in many cases represented a special challenge by making the certification job more difficult.

*The Farm Safety Program* represents another type of Extension activity that complements other government programs and to some degree attempts to make unnecessary the need for increased regulation through voluntary safety educational approaches.

Following passage of the Occupational Safety and Health Act in 1970, several major agricultural organizations sought to stimulate increased safety educational programs. From fiscal 1975 to fiscal 1979, special Federal funds were provided to expand State Extension safety programs. Almost all States now have an Extension safety specialist to develop and lead safety programs. Prior to the early 1970's, only a dozen States had full-time specialists.

Substantial reductions in farm accidents and injuries in several States have been credited in part to impact of these programs in increasing awareness of specific work hazards and knowledge of safety practices. For example, farm worker deaths from tractor accidents in California declined from 38 in 1976 to 22 in 1978. The program also has helped make agricultural producers aware of Occupational Safety and Health Act requirements and how to comply with them.

In other activities, Extension has worked with the Department of Commerce weather emergency awareness program and other agencies concerned with health and safety problems.

*The Integrated Pest Management (IPM) Program* and its evolution illustrates several aspects of ANR Extension's capability to play a key role in the development and implementation of new programs. IPM is a system attempting to use all suitable techniques in a coordinated strategy to keep pest populations below economically injurious levels. Key elements are the use of environmentally sound methods that also are compatible with the producer's economic objectives.

A major part of the IPM approach involves monitoring of pest populations and application of chemical pesticides on an as needed basis rather than on a regular schedule or precautionary basis, such as commonly has been done by producers. In many cases, more complex approaches have been developed using biological and cultural pesticides. Both economic and environmental concerns have stimulated the development of IPM systems.

Extension IPM programs have evolved from two pilot projects in 1971 to control insects on tobacco in North Carolina and on cotton in Arizona. Ongoing programs now are operating in all States and territories except Guam. A wide variety of commercial agricultural crops and livestock are involved where technology has been developed by research and program benefits have been demonstrated.

Four States also are developing IPM programs directed at urban pest problems. Federal funds were used to finance pilot projects and later to help support ongoing programs.

An important aspect of the program has been Extension's role in organizing and providing education and advice to farmer associations or cooperatives to implement IPM approaches, including hiring and financing of "scouts" to monitor pest infestations. Farmers pay for the direct costs involved. The program has stimulated

the growth of private consulting companies. An important indirect benefit of the program is that it has generated summer part-time employment for a large number of youth and others employed as scouts including a number of agricultural students who have gained useful expertise from the Extension scout training and the field experience.

In 1978 about 11.3 million acres of crops and 48,500 producers were a part of or directly influenced by ongoing Extension IPM programs. While results have varied from project to project, reports from the various programs indicate numerous examples of reduced pesticide use, increased crop yields, and increased net profits for producers.

NOTES

1. Gary B. Brumback, Clifford P. Hahn, and Dorothy S. Edwards, *Reaching and Teaching People: A Nationwide Job Analysis of County Agents' Work.* American Institutes for Research, Report AIR-64101-6-78-FR, 1978.

2. Robert E. Evenson, *Economic Consequences of Agricultural Extension Services.* Yale University, prepared for National Extension Evaluation Project, 1979, p. 25.

3. Wallace E. Huffman, *Some Economic Consequences of Agricultural Extension: An Assessment of Its Economic Returns.* Iowa State University, prepared for National Extension Evaluation Project, February 1979.

4. Thomas G. Brown and A. J. Collins, *Large Commercial Family Farms' Informational Needs and Sources.* University of Missouri-Columbia, a report of the National Extension Study Committee, 1978.

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# IV.
# Home Economics and Nutrition

## IV. HOME ECONOMICS AND NUTRITION

### PROGRAM DESCRIPTION

Extension home economics programs have reflected the impact of social and economic trends on families and individuals. Emphasis has shifted with changes in technology, population and family formation, production and consumption patterns. The change has been gradual, but continuous.

From 1900 through the 1920's, most resources were directed to combating rural poverty. During the depression years and World War II, the program expanded to reach more remote areas, to serve the most oppressed families, and to assist with the war effort. Increased attention was given to farm management and home finances. Use of mass media became a significant tool.

Consumer education and home improvement programs moved to the forefront through the 1950's. There was more attention given to urban and young families and to cognitive and affective skills, with less emphasis on manual skill development.

Through the 1960's and into the 1970's, increased use of print and electronic media was relied on to give service to urban and suburban families in consumer education, child development, and family relations. Paraprofessionals were employed to break social and economic isolation.

Today conservation of human and natural resources is a concern. Family lifestyles have changed. Energy and inflation are program priorities. Nutrition-related and other health problems are both local and national concerns. To many people, Extension programs are known as a continuous, reliable, and credible local source of assistance in each rural county and many cities. To many others, the agency and its home economics programs are unknown.

Extension home economics programs are directed to families and individuals to enhance their social and economic well-being through six program objectives.

(1) To improve food and nutrition knowledge and practices related to:

--physical and mental health.

--planning, selecting, purchasing, preparing, safe handling, storage, and home preservation of food.

(2) To improve consumer competence and behavior concerning:

--family financial management and security (decisions to buy, invest, save, and extend material and human resources).

--interpretation and evaluation of the marketing system, regulations and legislation affecting goods and services, and consumer rights and responsibilities.

(3) To improve acquisition and maintenance of safe, satisfying and affordable housing, furnishings, and equipment including:

--analysis of housing fit for intended use.

--efficient management of space, facilities, and scarce resources (for example, energy and water) within the environment in and around the home.

(4) To create and guide effective human development through:

--family relationships and child rearing practices.

--changing roles of family members and lifestyle adjustments.

(5) To improve selection, use, construction, renovation, and care of textiles including:

--clothing for personal use.

--household softwares--linens, carpets, draperies, upholstery.

(6) To improve family health and safety practices by:

--preventing illness and accident.

--creating a better understanding of environment, nutrition, and physical, mental, and social factors and needed action.

## PROGRAM DEVELOPMENT

Involvement of clientele in planning program content is an essential underlying principle in home economics programs. Program development begins with defining programs responsive to local, State, and national needs. Programs are planned through direct involvement of grassroots representatives and professional assistance from county, State, and Federal subject matter specialists and administrators.

A brief description of the roles played by those who help determine program objectives may be useful in understanding consequences of home economics and food and nutrition programs.

*Local Inputs*--Almost every county has a council or program development board. There were 5,376 county councils in fiscal 1978 with 76,047 active participants, mostly clients. Slightly more than 1 of every 10 members was a member of a minority group. In addition, ad hoc committees frequently help represent and identify target clientele and problems. Community perspective is provided by other agency personnel who provide services or resources to families, by elected county leaders and officials, and by other professionals.

Information and trend data on State and national issues, directions, and situations also are provided by State staff and county Extension home economists. Advisory councils and boards assess local needs and establish program priorities. Table 1 is a national summary of active citizen councils, boards, and committees. These numbers include only active organizations and active members. There are many other groups that are inactive and do not influence programs. In counties where this may be typical, the county agents and State staff are the strongest influence on programs.

*State Inputs*--Statewide long-range (3-5 years) priorities are identified by State staff working with guidance from State and area planning boards composed of clients and interest group representatives. In fiscal 1978, there were 380 active State and area boards. They assess national, regional, and State problems and needs. Various public agencies, appropriate land-grant faculty, and other groups participate. Established State priorities are used to determine the most pressing needs to which available resources will be applied.

State program leaders provide for coordination among specialist staffs and between home economics and other program units for interdisciplinary support and problem approaches.

*Federal Inputs*--Federal Extension administrators and staff give visibility to State concerns at the national level. Home economics and food and nutrition staff in turn provide information to the States and interpret government decisions, regulations, and legislation as they affect the primary functions of programs and families. National trends are assessed; formal relationships with other agencies are clarified.

The Federal staff often initiates pilot efforts in new areas and assists in implementing national and regional workshops for State personnel. The staff insures that successful and innovative State activities are communicated to all States. However, except for earmarked programs such as the Expanded Food and Nutrition Education Program (EFNEP), individual States make plans for program operations based to a large degree on their own needs, interests, and staff competencies.

*Role of ECOP and Home Economics Subcommittee Inputs*--The Extension Committee on Organization and Policy (ECOP) has a standing home economics subcommittee charged with national program review and response assignments. Its membership includes representation from the States in each region, the Federal partner, county home economists, and 1890 institutions.

In 1966, the ECOP home economics subcommittee prepared a major report, "FOCUS," which identified areas of national concern and suggested program directions, important client groups, and content of programing. "FOCUS II" followed in 1974, based on new census data and reflecting accelerated change in social, economic, and physical environments.

The "FOCUS" reports were designed to provide national program direction from a broad, multi-State perspective and to show how Extension programs can contribute to resolving major national concerns related to quality of life. The list of such concerns in "FOCUS II" indicates the wide range of areas highlighted for Extension attention:

Table 1. National Total of Councils, Boards, and/or Committees Assisting With Organization, Planning, Conduct, and Evaluation of Home Economics and Nutrition Extension Work and Their Social Composition[a]

| Item | State | Area | County | Total |
|---|---|---|---|---|
| Council and Boards | 127 | 253 | 5,376 | 5,756 |
| Their Racial Composition[b] | | | | |
| White | 1,900 | 2,519 | 67,155 | 71,574 |
| Black | 166 | 184 | 6,376 | 6,726 |
| Spanish surname | 35 | 24 | 1,082 | 1,141 |
| American Indian | 4 | 11 | 675 | 690 |
| Oriental | 1 | 1 | 625 | 627 |
| Other | 3 | - | 134 | 137 |
| Total | 2,109 | 2,739 | 76,047 | 80,895 |
| Number of Meetings in Fiscal Year 1978 | 211 | 604 | 18,229 | 19,044 |

Source: SEA/TIS/MIS 1978 Annual Reports, 5/79.

[a]Active Extension--organized councils, boards, and/or committees--meet and accomplish objectives--all States and territories except Massachusetts, North Carolina, Puerto Rico, Nevada, and Tennessee.

[b]Active members--those who carry out their responsibilities, including attendance at half or more of the meetings.

Consumer behavior, credit, security protection, inflation; preparation for marriage, child development, parenting, changing family member roles, population issues, child care, psychological well-being of people, adequate housing, improving neighborhoods, dealing with rising housing care, preventive health care, emotional health, drug use, venereal disease, exercise, food supply quality, proper medical treatment; and others.

While "FOCUS II" identified many serious social and economic concerns facing the nation, it was less successful in redirecting resources or priorities among the existing programs, shifting the clientele mix, or generating new resources. Problems of inflation, energy costs, nutrition-related health concerns, and lifestyle changes have intensified. "FOCUS III" is now being proposed.

## PERSONNEL AND FUNDING

Home economics and food and nutrition programs currently account for about 22 percent of professional staff time expended in Extension. However, when paraprofessional staff years are added, including those of the Expanded Food and Nutrition Education Program, about 35 percent of all staff time and almost one-third of the total Extension budget are allocated to this program area. The percentage distribution among States ranges from 15 to 49 percent. In 1977, nearly one-third of all home economics and food and nutrition dollars were Federally earmarked funds for EFNEP. These dollars represent the nation's single largest home economics program.

There are about 5,500 professional home economists and 4,400 paraprofessionals employed in Extension programs. Among the professional staff are 4,000 county home economists, 1,183 State staff and specialists, 300 district/county directors, and 12 professional members of the Federal staff, as shown in table 2. Some of the professional county staff members spend a major part of their time in 4-H and other program areas.

County home economics agents rate the conduct of programs as the most important and also the most time-consuming of 16 major tasks; the evaluation of program effectiveness is rated the most difficult. Preparing special program plans is the second most important and time-consuming task. Responding to client requests for special information is ranked third in time consumption and fourth in importance.1/

County Extension home economists, for the most part, work directly with clientele, volunteers, and paraprofessionals to plan and deliver home economics and food and nutrition information and education assistance.

The distribution of staff years by professionals and paraprofessionals in table 3 reveals program priorities and impact of earmarked funding on staffing patterns. After nutrition, professional time is spent almost equally in housing, family life, and resource management. For paraprofessionals, about 92 percent of their effort is in the food and nutrition program areas.

Table 2. Professional Staff with Primary Responsibility in Home Economics and Food and Nutrition[a]

| Staff | Number | Percentage |
|---|---|---|
| State | 1,183 | 22 |
| District/Area | 300 | 5 |
| County | 4,000 | 73 |
| National | 12[b] | — |
| Total | 5,495 | 100 |

[a]"Primary Responsibility" indicates that most but not all time is devoted to the home economics area.

[b]Less than 1 percent.

Table 3. Professional and Paraprofessional Staff Time by Program Components

| Program Component | Professional[a] Staff Years Number | Professional[a] Staff Years Percentage | Paraprofessional[a] Staff Years Number | Paraprofessional[a] Staff Years Percentage |
|---|---|---|---|---|
| Food & Nutrition | 732 | 18 | 155 | 4 |
| EFNEP | 593 | 15 | 3,894 | 88 |
| Housing & Home Environment | 551 | 14 | 53 | 1 |
| Family Life Education | 518 | 14 | 62 | 1 |
| Family Resource Mgt. | 476 | 12 | 218 | 5 |
| Textiles & Clothing | 353 | 9 | 40 | 1 |
| Health & Safety | 143 | 4 | 18[b] | — |
| Subtotal | 3,366 | 86 | | |
| Program Support[c] | 585 | 14 | | |
| Total | 3,951 | 100 | 4,440 | 100 |

[a]Based on SEA/TIS/MIS 1978 Annual Reports. Table displays number of staff years expended, not total staff employed.

[b]Less than 1 percent.

[c]Leadership, organization, development, and community services activities.

## PROGRAM DELIVERY SYSTEMS

Home economics and food and nutrition program reliance on one-to-one direct teaching of clients has been reduced significantly over the years. The Expanded Food and Nutrition Education Program presently is the principal application of the one-to-one teaching approach.

The dominant emphasis in home economics program delivery has been on demonstration to individuals who volunteer to diffuse the received knowledge, skills, and capacities to a wider circle of interested clients. Homemaker clubs have been the traditional clientele and volunteer diffusion groups. In the last decade, increased emphasis has been placed on working with special program interest groups and through mass media (newspapers, journals, radio, and TV) and secondary diffusion approaches.

The demonstration and secondary diffusion approach has helped some home economics and food and nutrition programs to reach a wide audience and to maximize the number of individuals and families receiving their educational materials. On the other hand, this approach reduces control over teaching content and methods and limits retrieval of data needed to evaluate impact of the program on recipients. Also, there is an impact trade-off between the number of clientele reached and the quality of the educational or information experience. As a general rule, the more personal the contact, the more impact expected.

Table 4 shows the number of persons reached by professional home economists during fiscal 1978 through the several major group activities.

Table 4. Contact Audience Participation Reported by Extension Home Economists for Fiscal Year 1978

| Types of Clientele | Number of different groups | Number of members, enrollees, and/or participants |
|---|---|---|
| Homemaker club groups | 32,237 | |
| Members | | 615,000 |
| Additional people reached | | 600,000 |
| Special interest groups | 63,204 | |
| Extension education programs | | 2,589,659 |
| EFNEP(graduated) | 736 | 23,215 |
| Non-Extension groups | 12,622 | 674,087 |
| Total | 108,799 | 4,501,961 |

## EXTENSION HOMEMAKER CLUBS

Extension homemaker clubs were for many years the primary delivery approach used by Extension home economists. Although their members have been declining in the face of continuing recruiting efforts, there presently are more than 32,000 homemaker clubs in 47 States, the District of Columbia, and Puerto Rico with more than 600,000 members.* A National Extension Homemaker Council and member associations in 41 States and Puerto Rico represent the interests of the clubs and their members and cooperate with Federal and State Extension. Table 5 shows homemaker clubs and membership by major regions of the country.

Table 5. Homemaker Clubs and Membership by Geographic Region

| Region | Number of Clubs | Membership |
|---|---|---|
| Northeast | 2,267 | 57,522 |
| North Central | 15,589 | 284,747 |
| South | 11,717 | 231,173 |
| West | 2,738 | 42,099 |
| Total | 32,311 | 615,541 |

Goals of the homemaker clubs are to increase families' knowledge and understanding of social and economic issues affecting them, identify needs of homemakers, develop education programs responsive to those needs, and develop leaders for volunteer action programs. Local homemaker club representatives receive subject training from Extension home economists. The volunteer members in turn "reteach" the subject to members of their clubs and to other individual and community organizations they are able to reach. Extension homemakers' interests and efforts include the following subject matter areas: housing, energy, and environment; health, food and nutrition; family relationships and child development; family resource management; safety and emergency preparedness, citizenship and community outreach, cultural arts; textiles and clothing.

A national survey of Extension homemakers in 1975 estimated that club members spent an average of 79 hours per member in volunteer service in a 12-month period.

*Iowa, New Jersey, Utah, and Guam do not have homemaker clubs.

Expanded to the total membership, this would be equivalent to more than 25,000 years in volunteer time annually. Homemakers serving in an Extension teaching role reach an audience of an estimated 1 million youth and 2 million adults each year. This secondary audience is in addition to primary contacts reported in table 4.

Other volunteers also help to diffuse Extension materials, but a reliable estimate of people reached by them is not available. Including the 600,000 homemakers themselves, Extension home economics subject matter material is available to more than 3.5 million people annually through the homemaker club system.

State Extension policy with regard to affiliation with homemaker clubs varies among States and, in fact, is changing in some cases. Homemaker clubs remain one of the primary program delivery channels in some States, and professional staffs are encouraged to provide educational organizational assistance directly to them. Other States require home economists to encourage local club members to attend Extension education events conducted for the general public in place of providing direct assistance to club members. A few States are moving away from sustaining homemaker clubs to stronger emphasis on developing and providing home economics educational materials and leadership development to broader based clientele populations.

## SPECIAL INTEREST GROUPS

"Special interest groups" programs account for the largest segment of State and county professional staff time.

"Special interest groups" is a catchall term to describe single purpose meetings aimed at "general public" or target audiences. The audiences usually are people whose common interest in selected subject matter brings them together for one or a series of indepth learning experiences in home economics and food and nutrition. Activities include demonstrations, exhibits, or workshops scheduled in easily accessible space such as shopping malls, public buildings, churches, and schools. This approach has special appeal to couples as well as to women employed outside the home when scheduled during nonworking hours.

There also is a growing effort to continue EFNEP homemakers in other Extension programs for further education after they are "graduated" from the intensive nutrition education program. Subject matter of all kinds is offered and groups are encouraged to meet regularly in group or club-like informal settings.

Other groups assisted through home economics Extension include clientele, teachers, and other providers of information and educational types of assistance to public and private non-Extension clientele. Extension home economists have assumed larger roles as "teachers of the teachers," particularly in more technical subject matter areas when supplementary education is needed, but either is not available or inadequate from the teachers' own organizations. Both professionals and paraprofessionals are participants in these activities.

MASS MEDIA

Educational methods have changed with population increases and technological advances. Mass media have been used increasingly to reach larger audiences for a wide range of subject matter and program objectives.

Many county Extension personnel and specialists have information columns in newspapers. Newsletters also are used extensively by most county and State workers.

County and State Extension personnel have increased access to radio and television time. Public service announcements which are localized for counties often are used.

Newspapers have published supplements based on home economics and food and nutrition programs and subject matter content. Publications of timely content are reproduced for reader information and reference.

Lightweight cardboard exhibits have been extensively used for visibility in public areas and to signal point of purchase information.

Much of the material for mass media use originates with State staffs but is distributed through county offices to get wider local distribution. This mass media approach takes advantage of the increasing availability of sources and means for diffusion of information and educational material. However, these involve trade-offs in the impacts achieved with individuals reached, and the total number of persons potentially benefiting from Extension programs. The higher educational level of the general audience in more recent years may serve to improve the effectiveness of the mass media approach.

Advances in telecommunications also have aided information dissemination and enhanced clientele educational opportunities.

Answering services and dial access systems have been established in some States to respond to consumer economics and food and nutrition questions. Conference calls and video tapes within States and throughout the nation are increasingly used in place of face-to-face meetings.

Interactive computer systems have been developed to afford the opportunity of individual learning and to quickly analyze and develop family budgets.

Films, slides, and filmstrips remain popular in home economics education, and closed circuit television is proving useful.

## EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM

The need for an effective food and nutrition education program for low-income families was well established by the mid-1960's. Pilot studies funded by the Department of Agriculture and carried out in Alabama, Rhode Island, Texas, Massachusetts, and Missouri identified and assessed alternative approaches for such a program.

The most ambitious and best documented study was the 5-year pilot project in Alabama. Paraprofessional aides contacted families on a one-to-one basis and taught the homemakers food and nutrition and other homemaking skills. Paraprofessionals worked with homemakers in their own homes, demonstrating new principles and techniques, and guiding the homemakers into sound nutritional practices.

As the project progressed, increasing numbers of low-income families participated in and benefited from the education. Overall, this pilot effort showed that an educational program tailored to interests, needs, competencies, and economic and educational levels of homemakers could be effective in changing their eating habits. It showed that paraprofessionals under the supervision of professional Extension home economists could be trained to teach low-income homemakers effectively.

These study projects and the implementation of the initial Expanded Food and Nutrition Education Program in all States were accomplished through the direct assistance and leadership of Extension home economists. They trained and supervised paraprofessional aides to teach low-income homemakers on a one-to-one basis or in small groups and continued to provide such training and updating of subject matter and techniques to aides consistent with growth of the program and turnover of program aides. A trend in use of paraprofessional aides is shown in table 6.

Since EFNEP began, more than 22,000 paraprofessionals have been trained and worked in the program.

## PROGRAM CLIENTELE

Early Extension home economics clientele included farm women, members of homemaker clubs, and then homemakers wherever they might be. To meet new social and economic demands, additional clientele has been sought.

Today the potential list of clientele is a long one--low and marginal income families, youth, pregnant women, parents of infants and young children, senior citizens, young families, young adults, older adults, young couples, parents of adolescents, child care providers, middle income families, and adolescents.*

*"FOCUS II," was prepared by the ECOP home economics subcommittee to provide national program direction for the Extension home economics program, 1974.

Table 6. The Trend in the Use of Paraprofessional Aides in the EFNEP Program

| Fiscal Year | Program Funding $ million | No. Paraprofessional Aides Full-Time Equivalents | No. Paraprofessional Aides Total (including Part-Time) |
|---|---|---|---|
| 1969 | 10 | 2,966 | 4,459 |
| 1970 | 29 | 5,379 | 6,886 |
| 1971 | 49 | 7,347 | 9,073 |
| 1972 | 51 | 7,132 | 9,061 |
| 1973 | 50 | 6,390 | 8,080 |
| 1974 | 51 | 5,296 | 7,109 |
| 1975 | 51 | 5,127 | 6,846 |
| 1976 | 51 | 4,834 | 6,518 |
| 1977 | 51 | 4,658 | 5,669 |
| 1978 | 51 | 3,717 | 5,219 |

Home economics and food and nutrition programs have changed from the almost exclusively homemaker club and predominantly rural orientation of program participants in the 1950's to a diversified clientele located in urban and rural areas in the 1970's.

Factors influencing this diversification and broadening of the audience include the shift of populations to cities, organization of rural areas, women entering the labor force, electronic media, EFNEP, and decreasing use of homemaker clubs as the major home economics delivery system. As the program clientele base expanded, distinctive audience categories have been defined for planning and reporting purposes. These include:

(1) Clientele with similar functional or special needs: low income, working women, men, handicapped, ethnic minorities.

(2) Clientele in specific developmental processes of family life: youth, pregnant women, parents, young families/adults, senior citizens.

(3) Clientele who are both program recipients and "reteachers:" volunteers, aides, paraprofessionals and professionals of other public/private agencies, and traditional homemaker groups.

## CLIENTELE CHARACTERISTICS

A national survey conducted for the Extension Evaluation Project by the Gallup Poll 2/ showed that a total of 17 million (10.1 percent) of the adult population in the United States have participated in some aspect of the home economics and nutrition Extension programs. This study showed that both women and men participate in these programs, and generally participation appears to be correlated strongly with levels of income, personal achievement, and rurality of residence.

Fifteen percent of the women surveyed had participated in home economics and nutrition programs compared to 9 percent of the men.

Participation increased with education--14 percent with a college education, 10 percent with a high school education, and 7 percent who had completed grade school.

Higher income levels numbered more participants--more than $20,000, 14 percent; under $10,000, 7 percent.

Seven percent of those who were rated as professionals had been participants, compared to 9 percent of those in manual labor categories.

Those coming from farm homes participated more--35 percent compared to 10 percent from nonfarm homes.

People in low density communities participated more than those from high density places. In communities with less than 2,500 people, 17 percent had participated, compared to places with more than a million people where only 7 percent had participated.

By race, the Gallup study showed that 11 percent of whites surveyed had participated in Extension home economics programs compared to 6 percent for nonwhites.

Data supplied by Extension agents for fiscal 1978 give a similar picture, as table 7 indicates.

Table 7. Participation in Extension Home Economics Programs, by Racial Characteristics

| Race | Number (millions)[a] | Percentage |
|---|---|---|
| White | 20,736 | 75 |
| Black | 4,656 | 17 |
| Spanish | 1,594 | 5 |
| Am. Indian | 283 | 1 |
| Oriental | 108 | 1 |
| Other | 251 | 1 |
| Total | 27,628 | 100 |

[a]Includes and adds multiple participation with the same client to indicate racial distribution of clientele.

Compared with the 10 percent of the total Gallup Poll sample who had participated in home economics and nutrition education programs through such direct contact as homemaker clubs and special interest meetings or events and EFNEP, the Gallup survey indicated that 51 percent of the respondents reported receiving some information from Extension. The sources are summarized below.

Distribution of Sources Among Respondents Receiving Information

| Source | Percentage |
|---|---|
| Newspapers | 29 |
| Television | 26 |
| Radio | 26 |
| Publications | 21 |
| Newsletters | 18 |
| Special interest meetings | 12 |
| Telephone | 9 |
| Home visits | 3 |
| Did not know | 33 |

Because some respondents indicated multiple sources, the percentages are not additive. Obviously secondary diffusion methods, primarily mass media, substantially extend the dissemination of home economics and nutrition information.

The demographic pattern among respondents who received information was similar to that for participants described. However, the differences between income levels, employment status, place of residence, and levels of education were more extreme. This indicated stronger rural orientation and greater access to and capability for using the information among the moderate to higher income and higher educated groups.

The subjects on which respondents were most likely to receive information were reported as follows:

| Subject Matter | Percentage of Recipient Respondents Reporting |
|---|---|
| Food preservation and preparation | 30 |
| Nutrition | 22 |
| Energy conservation | 22 |
| Crafts and recreation | 11 |
| Money management or consumer affairs | 10 |
| Do not remember the subject | 50 |

## HOMEMAKER CLUB MEMBERSHIP

There is considerable concern among Cooperative Extension Service personnel concerning the ability to reach certain clientele through the traditional homemaker clubs. Here are several questions that have been posed.

(1) Does the age of club members show a need for alternative membership strategies to reach young homemakers? Sixty percent of the members are 30 to 59 years of age compared to about 33 percent for all women in the population. Club members more than 50 years old total 29 percent compared to 16 percent for the nation.

(2) Does the organizational structure reach working women effectively? Only 30 percent of homemaker club members are employed compared to 50 percent for all women 13 to 64 years of age. Also, about 83 percent of the homemakers live in rural places under 10,000 population compared to 53 percent of the general population. About a third live on farms, a fourth in the country but not on a farm, and a fourth in towns with less than 10,000 people.

(3) Does the educational level of members imply a different approach to reach the less well-educated? Forty-three percent of the members have finished high school compared to a third of all women in the population. In addition, 28 percent have been to or finished college compared to 19 percent for women in general. Only 26 percent of the members have less than a full high school education compared to 46 percent for all women.

(4) Who plans the programs? Does program content hold the young homemaker and the less educated? Homemaker clubs appear to hold their members. There is a positive correlation between a homemaker's age and years of membership. More than two-thirds have been members more than four years and only 12 percent less than a year.

(5) Should membership promotion be increased? Membership has not been increasing nationally.

(6) Is there a need for involving men in homemaker clubs? Data are not available, but some States report growing interest of young and older men in club programs and activities.

Homemakers are largely a stable audience and constitute a source of steady demand for new subject matter. They are a source of continuing political support for Extension. The stability is a source of efficiency in serving established clientele. It also appears to limit flexibility in meeting demands for a broadening audience with a wider geographic distribution in urban areas. The size of the membership, its national organization, and the continuing interests of homemaker clubs in association with the Extension Service indicate homemakers find the association beneficial and satisfying to their personal interests both as clientele and volunteer extenders of the system's educational materials.

## ECONOMIC AND SOCIAL CONSEQUENCES

An aggregate assessment of the economic and social consequences of home economics and nutrition programs has not been possible. The available data on economic and social consequences are limited and generally not nationally consistent. Much of the data needed for a comprehensive evaluation has not been collected. An exception is the Expanded Food and Nutrition Education Program--a relatively new program, national in character, with common objectives and target clientele in each of the States.

As already noted, to assist with the evaluation, a national survey based on a random sample of 1,514 adults was carried out by the Gallup Poll. Its purpose was to estimate the number of people who have participated in home economics and nutrition programs, to find out the types of information received by respondents, and to obtain their views on its usefulness. (Because no time frame was provided to respondents for answering questions, estimates reflect respondent experience with Extension programs in any or all years prior to 1978, the year the poll was taken.)

Selected findings on economic and social consequences are summarized, first for home economics programs, then for food and nutrition programs, and finally for EFNEP.

## NATIONAL SAMPLE RESULTS

The following findings from the national survey are summarized.

Knowledge and Use of Extension Home Economics Programs from a National Sample

| Resource | Percentage |
|---|---|
| Never heard of Extension | 39.5 |
| Heard of, but no participation | 34.4 |
| Participation in Home Economics and Nutrition Programs | 10.1 |
| Home Demonstration or Homemaker Clubs | 2.4 |
| Meetings or special events | 6.2 |
| EFNEP | 1.5 |
| 4-H Participation | 2.4 |
| Unknown | 13.6 |

Expansion of the participation rates (10.1 percent) indicates a total of 17 million of today's adult population have participated actively in some aspect of home economics and nutrition Extension programs sometime in the past.

A total of 51 percent of the respondents including the active participants reported that they had received home economics and nutrition Extension information at some time. Among these, 23 percent said it was very useful, 19 percent fairly useful, and 10 percent not useful or not too useful. Almost half, 48 percent, could not say whether the information had been useful to them.

Expansion of the foregoing respondent percentages to the total adult population indicates 18.5 million of today's adults at some time in the past received information that they deemed "very useful" and 14.5 million considered it "fairly useful." These numbers compare with an estimated 17 million of today's adults who have actively participated in home economics and nutrition programs.

The last comparison seems to indicate that a large proportion of the information diffusion may not be highly effective among the recipient audience. This implies more careful focusing on both subject matter and potential clientele could increase overall effectiveness. It also suggests that the research information base for developing relevant educational materials and determining actual needs of potential clientele may be weak.

The following selected findings provide evidence of the economic and social impacts of home economics programs. They represent the gleaning and summation of available data from State narrative reports and followup inquiries to State program leaders, from surveys of various geographic scope, and from abstracts from formal studies of specific program activities.

## INCREASED INCOME THROUGH HOME PRODUCTION

Estimates of income increase or savings realized by Extension clients engaged in home production and maintenance activities are summarized in table 8.

Table 8. Estimates of Income Increase or Savings Realized Through Home Production and Maintenance Activities

| Activity | Average Number of Participants Per State[a] | Average Dollar Value Per Participant[b] | Average Dollar Value Per State |
|---|---|---|---|
| | | dollars | dollars |
| Home gardening[c] | 74,645 (7) | 150-600/yr (5) | 11-45 million |
| Food preservation[c] | 35,591 (8) | 167-464/yr (5) | 6-17 million |
| Home repair | 9,981 (9) | 19.24 up[d] (3) | 192 thousand |
| Clothing construction | 8,223 (8) | 50.00/yr (11) | 411 thousand |
| Refinishing/reupholstering | 7,179 (9) | 18.54 dp[d] (8) | 133 thousand |
| Recycling clothing | 2,586 (8) | 10.13 dp (5) | 26 thousand |
| Sewing machine maintenance | 626 (9) | 10.20 dp (3) | 6 thousand |

[a]Based on reports solicited from 7 to 9 States, as indicated in parentheses.

[b]Based on 3 to 11 State narrative reports and followup information.

[c]These two activities are highly interrelated, so the savings estimates are not independent of one another.

[d]dp=during program; up=unknown period.

The foregoing data were compiled from different sources after the fact, so methodology used among the States for estimating savings is not consistent. Because different program leaders are involved in the activities, the variation in methodology among activities may be as important as the differences among States. However, there is a positive correlation in the scale of the savings per participant and the reported number of participants. Ordinarily, one would expect highest participation in activities providing the greatest benefit. The same correlation also suggests a basis for setting priorities on subject matter objectives for home economics programs. These in turn would need to be appraised in terms of utility and capacity to use among alternative clientele groups.

## FINANCIAL MANAGEMENT AND CONSUMER AFFAIRS

A search by Kappa Systems, Inc., of home economics studies published between 1961 and 1978 found six dealing with consumer affairs and resource management. None provided any real data on economic consequences. However, there is evidence that people believe they benefit from such programs and that they are saving as a result of them. There also is evidence of practice and knowledge change.

For example, an evaluation of a televised consumer education program ("Consumer Casebook") in Connecticut found that, as a result of the material presented, 88 percent of the respondents reported checking warranties, 53 percent reported getting written estimates on car repairs, and 30 percent reported contacting consumer agencies. These percentages are reported to be greater than for the general public.

Most State narrative reports provided too little information to adequately assess the full impact of resources and consumer programs, but they do provide clues to client response and practice change.

(1) In Arkansas a survey of practice change in food buying based on home economics newspaper articles showed 37 percent of those polled saying they had improved buying practices. The circulation involved 64,000 readers.

(2) A Minnesota workshop with an unspecified number of participants provided guidance in buying older homes. The average savings for those who did buy within 6 months after the course was reported at $2,000.

(3) Of 73 clients at meetings on meat buying in Alabama, 96 percent reported an average savings of $88 per month over 4 months, 97 percent reported they learned to read labels, 91 percent improved storage, and all reported improved cooking methods. Also, each person reported passing the information on to an average of seven others.

(4) A consumer counseling program in New York had 156 clients of which 126 developed financial plans, presumably as a result of the program.

(5) In Nebraska, 95 percent of the audience for a program to protect consumers against fraud rated the lesson "very helpful."

(6) Programs in estate planning in Alabama, Michigan, Texas, and Kentucky reported an increase in the percentage of people planning with their families and making wills.

(7) Evaluation of a special program for women in South Dakota found that 31 percent established their own credit rating following the program.

(8) Studies in Connecticut and Massachusetts showed significant participant acquisition of knowledge on financial matters.

## ENERGY CONSERVATION

Home economics specialists and agents have been able to move rapidly into energy conservation programs in and around the home. An Arkansas study, attributed to Extension programs, estimated actual savings from insulation. Less than half of the participants made changes, but for those who did, savings were $180 per participant.

Nebraska reported that 130 low-income homes were insulated in one county, with an estimated total savings of $7,800 during a 6-month period. A Missouri program involved 489 families, with savings ranging from $18 to $31 per month. An Illinois study with 150 participants reported 50 percent made insulating window shades following a lesson on the topic.

Minnesota reported a decrease in the number of loads of clothes washed by Extension participants from 2.4 per family per week in 1977 to 1.8 in 1978. The proportion of hot water washes also fell by 10 percent. Of course, without data or trends for nonparticipants, it is not possible to isolate the direct effects of the home economics program.

Kentucky reported on a computerized home energy analysis program (CHEAP) to inform homeowners about the marginal returns from additional insulation. Using estimates of savings from actual additions to insulation, dollar savings can be calculated and attributed to the program. Some 375 of 758 participants returned evaluations. The majority (52 percent) had planned to insulate before participating in CHEAP, but only one-half did so after CHEAP. Eleven percent who had not planned to insulate were influenced to do so. Participation in the program apparently influenced the final decisions for about a third of the participants. Estimated savings for homes that were insulated was $14,492, about $57 per home.

The results of a home energy audit program in Iowa were similar. About half of the participants actually carried out their plans to insulate. The majority of respondents reported Extension information was "useful." Average yearly savings were estimated at $74 for one or more improvements.

## STABILIZING FAMILY RELATIONSHIPS

To help married persons gain insights for better martial relationships, a series of 12 television programs entitled "Living Married" were developed by Extension staffs in Minnesota, Iowa, Wisconsin, North Dakota, and South Dakota. From 1974 to 1977, an estimated 40,000 adults viewed the program and more than 300 discussion groups met on common marital issues. Evaluation questionnaires, personal comments, letters, and phone calls indicated an overwhelmingly positive response. A survey of 136 viewers in 1974 showed that respondents viewed an average of 8 out of 12 programs. Sixty-five percent indicated they had a better understanding of the value of good communication in marriage and were making efforts to improve communications and conflict management.

A 1976 Minnesota study observed changes in the attitudes of 82 viewers by comparing attitudes before and after the program. More than 50 percent changed their attitudes toward accepting conflict as natural and manageable, believing in equality in marriage and growth in knowledge of in-law matters.

## DEVELOPMENT OF CHILDREN

All States offer Extension educational programs on parental interaction with children. In Ohio, for example, 1,000 families participated in "Practical Education for Parenting" during a recent year. Teachers' observations and parent evaluations indicated that parents increased their skills in guiding child development, enhanced the emotional stability of the home, and decreased stress for children and adults.

More than 50,000 families in Pennsylvania received learning packets to increase their parent skills. Two thousand copies of a similar home study course for new parents were used by low-income parents in Washington. Based on follow-up contact with 53 participants who completed the five-lesson course, parents reported having learned basic infant care skills.

New York Extension reported the following benefits from educational programs and support services to parents using child care services and providers of such services:

--Formation of the Family Day Care Provider Association in Nassau County.

--Certificate of training course for licensed or unlicensed providers of day care.

--Greater involvement of lay citizens through advisory structures and advocacy projects.

--Increased acceptance or responsibility with the formal child care network (although not necessarily funding) for providing supporting services to upgrading the quality of child day care.

--Expansion of Family Resource Centers to three counties.

## NUTRITION EDUCATION

Few nutrition education programs have been evaluated in terms of economic and social consequences. When studies have been made, they usually provide evidence that recipient knowledge of some aspect of nutrition has been enhanced.

Weight control is the area where the most definitive results or impacts have been reported by a large number of States. Using the results from weight control programs of five States, the mean reported weight loss was 11 pounds per participant over an average program period of 11.6 weeks.

In Connecticut, 12 aides and 6 volunteers conducted an indepth geriatric nutrition education program at congregate meal sites. They reported the following changes in eating patterns of the 42,556 people reached:

--25 to 50 percent increased consumption of nutrient-rich fruits and vegetables.

--80 percent increased dollar savings as a result of better meal planning.

--75 percent of the elderly shared what they learned with others.

--Several hundred volunteer leaders recruited by Extension assisted more than 1,000 additional elderly citizens, either individually or in groups, to maintain and improve nutrition habits.

There are numerous studies and reports on changes in food consumption resulting from other Extension nutrition education programs. Other studies report changes in food handling practices that reduce health risks. Many studies appear to focus on the use of pressure cookers for proper home preservation.

## THE EFNEP APPROACH

A total of 1.7 million homemakers representing more than 6 million family members have participated in the Expanded Food and Nutrition Education Program since the start of the program in 1968. About three-fourths had family incomes of less than $5,000. Fifty-eight percent lived in cities, and 60 percent represented minorities. State EFNEP units are located in sites characterized by high densities of low-income families. Units are relocated as needed to enhance program efficiency.

An analysis of EFNEP through late 1977 and early 1978 by the Synectics Corporation found that in March 1978, 21 percent of the homemakers in the program for 24 months were serving adequate diets as opposed to 4 percent at the time of program entry (see figure 1.)

This analysis was based on food recall data obtained from interviews with the homemaker clients. For scoring purposes, an "adequate daily diet" consisted of two or more servings of milk and meat, four or more servings of vegetables and fruits, and four or more servings of breads and cereals.

Figure 1.

**Percentage of Program Family Homemakers Reporting Two or More Servings of Milk, Two or More Servings of Meat , Four or More Servings of Fruits and Vegetables, Four or More Servings of Breads and Cereals After Various Periods of EFNEP Participation (March 1978)**

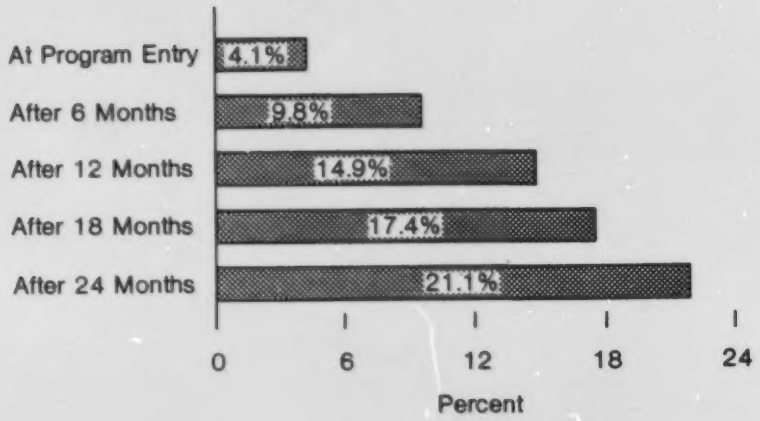
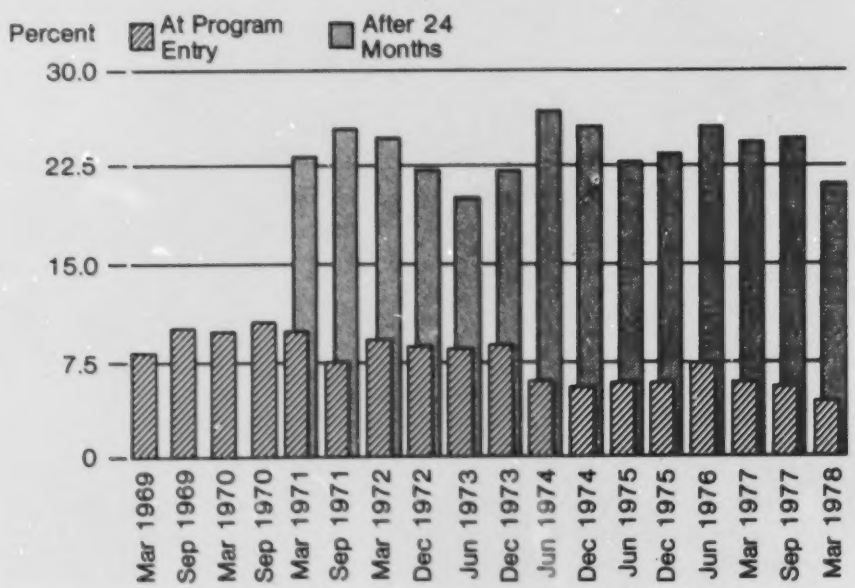



Figure 2.

**Percentage of Program Homemakers with Adequate Servings in All Food Groups at Program Entry (Food Recall 1) and After 24 Months of Program Participation (Food Recall 5)**



An historical analysis of the proportion with adequate servings in all food groups is summarized in figure 2. The program entry data suggest that EFNEP has been reaching homemakers who are in special need of nutrition education. The proportion with adequate diets at program entry was about 8 percent from 1969 through 1973, but has hovered around 4 or 5 percent in more recent years.

While there is no consistent trend in the percentages reporting adequate diets after 24 months, the percentage improvement has actually increased over the years. EFNEP, over time, has been reaching a clientele with less adequate diets to begin with, and there has been no obvious decline in the percentage reporting adequate servings in all food groups after 24 months of program participation.

During the history of EFNEP, the proportion of EFNEP families receiving food assistance, especially in Food Stamps, has risen. In March 1978, nearly one-half of program families were in the Food Stamp program as compared to less than 15 percent in the later 1960's. The increase is noteworthy because there is no consistent trend during this period in the percentage of EFNEP families receiving general welfare assistance.

A comparison of Food Stamp and non-Food Stamp families by Synectics Corporation indicated that Food Stamp homemakers reported less adequate diets than non-Food Stamp homemakers at program entry, but that participants remaining at the 24-month interval had comparable scores.

More than 309,000 volunteers have contributed to the delivery of the Expanded Food and Nutrition Education Program during its history. Volunteers from all socioeconomic groups work with EFNEP families and youth. About 60 percent of them have been from low-income families. Many of the volunteers are graduated EFNEP homemakers.

## COOPERATION WITH OTHER AGENCIES

State agents and specialists in the home economics and nutrition area reported working with more than 250 different "cooperating agencies" during fiscal 1977. These included all major government departments, many State agencies, and various private organizations.

The degree of cooperation is variable. It may be intensive and widespread as in certain nutrition, energy, and health programs. Or it may involve only clientele referrals and sharing of selected materials and presentations in a single program, such as feeding sites for the elderly. Other agencies provide audiences, facilities, and services not readily available to home economists.

Memoranda of understanding or other agreements delineating areas of responsibility and cooperation are drawn at Federal and State levels and signed by appropriate administrators. These are shared with counties, but at that level agreements usually are less formal. Often cooperation is in direct proportion to location of agency offices, contacts between personnel, or depth of related program efforts with mutual clientele. As county home economists usually live in the county

in which they work, they often belong to the same organizations as agency personnel, thus creating opportunities for cooperation. This also occurs at State and national levels.

Available research is judged by Extension home economics and nutrition specialists to be useful though incomplete. The major sources of research are the Department of Agriculture, American Home Economics Association, industry, research faculty (with research appointments), State and regional experiment stations, and Cooperative Research Service.

Adequacy of the existing research base or effectiveness of its utilization has not been assessed in the evaluation. However, assessment needs indicate more research covering a generally broader subject matter area and more interaction with researchers would improve effectiveness of the home economics and nutrition program.

There are other public and private sources for the same or similar information and educational material. However, these sources and Extension relationships have not been specifically assessed in this evaluation, except as discussed under "Cooperation with Other Agencies." These other sources are evidenced by books, bulletins, and journals covering the same or similar subject matter and by private institutions and public programs having the same or similar concerns for the family--the main target clientele for home economics and nutrition Extension.

## NOTES

1. Gary B. Brumback, Clifford P. Hahn, and Dorothy S. Edwards, *Reaching and Teaching People: A Nationwide Job Analysis of County Extension Agents' Work.* Washington, D. C.: American Institutes for Research, Report AIR-64101-6-78-FR, 1978.

2. The Gallup Organization, Inc., *The Gallup Study of Participation and Awareness of the Agricultural Extension Service.* Princeton, N.J., 1979.

# V.
# 4-H Youth

## V. 4-H YOUTH

### PROGRAM DESCRIPTION*

The first USDA sponsored agricultural youth club (to become known in 1911 as 4-H for Head, Hands, Heart, and Health) was organized in 1907. While the Smith-Lever Act of 1914 did not specifically mandate inclusion of 4-H in Extension, Senator Lever said he expected a "large share of this money" would be for expansion of Extension youth work.1/

The purpose of 4-H has been variously stated. A paraphrase of the Smith-Lever language would have it to be: "To diffuse among the people of the United States, through youth and their families, useful and practical information and to encourage its application." In its earliest days, 4-H was a means of demonstrating agricultural technology to dubious farmers, in a way they could not object to or ignore. Later 4-H took on a vocational training role for rural and farm youth.

Today 4-H is multipurpose, focusing on general growth and experience as well as technical and social leadership training, even though it still has a public image of being about farm skills for farm youth.

The most basic and obvious consequence of the establishment of the 4-H program as part of the Cooperative Extension Service is the existence about 70 years later of a large and complicated, decentralized educational organization for youth.

### STRUCTURE AND PROGRAM STAFF

As with most Extension activities, 4-H is a cooperating program of USDA, State land-grant universities, and county governments. However, private citizens acting as volunteers and private industry-given support through national and local foundations are partners as well. 4-H is not organized in a line hierarchy. The relationship between these groups is one of negotiation among partners. Size of the organization and its resources are indicated in tables 1 and 2.

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*The following discussion imposes an appearance of homogeneity to 4-H which is somewhat artificial. The structure and operation of 4-H program activities are likely to vary considerably across comparative levels of the organization, although the extent of this variation is presently open for investigation. For the purposes of this report, it is necessary to refer to the program in a general way even though there may be individual cases of significant difference from this general norm.

As with numerous other Federally assisted programs, 4-H has a decentralized administrative organization. Administrative functions are provided by the professional 4-H staff in Science and Education Administration-Extension and in the Extension 4-H State staff office.

The internal linkages among personnel and the public and private linkages that may possibly occur are illustrated in figure 1. Only one line (authority) relationship is depicted in the entire set--that between the land-grant university through the director for Extension and the county Extension office staff.

Table 1. Comparative Numbers of Youth, Volunteers, and Extension 4-H Staff for 1976

| Type | Numbers | Time Allocated (Staff Years) |
|---|---|---|
| USDA/SEA Extension Professionals | 10 | 10 |
| State Level Professionals | 401 | 401 |
| County Level Paid Staff[a] | 8,323[b] | 5,912 |
| Volunteer 4-H Leaders | 573,615 | 63,724 |
| Youth Participants | 5,811,558 | n/a |

[a]Includes both professional and paraprofessional staffs.

[b]Number of paraprofessionals included in this total is estimated, based on sample.

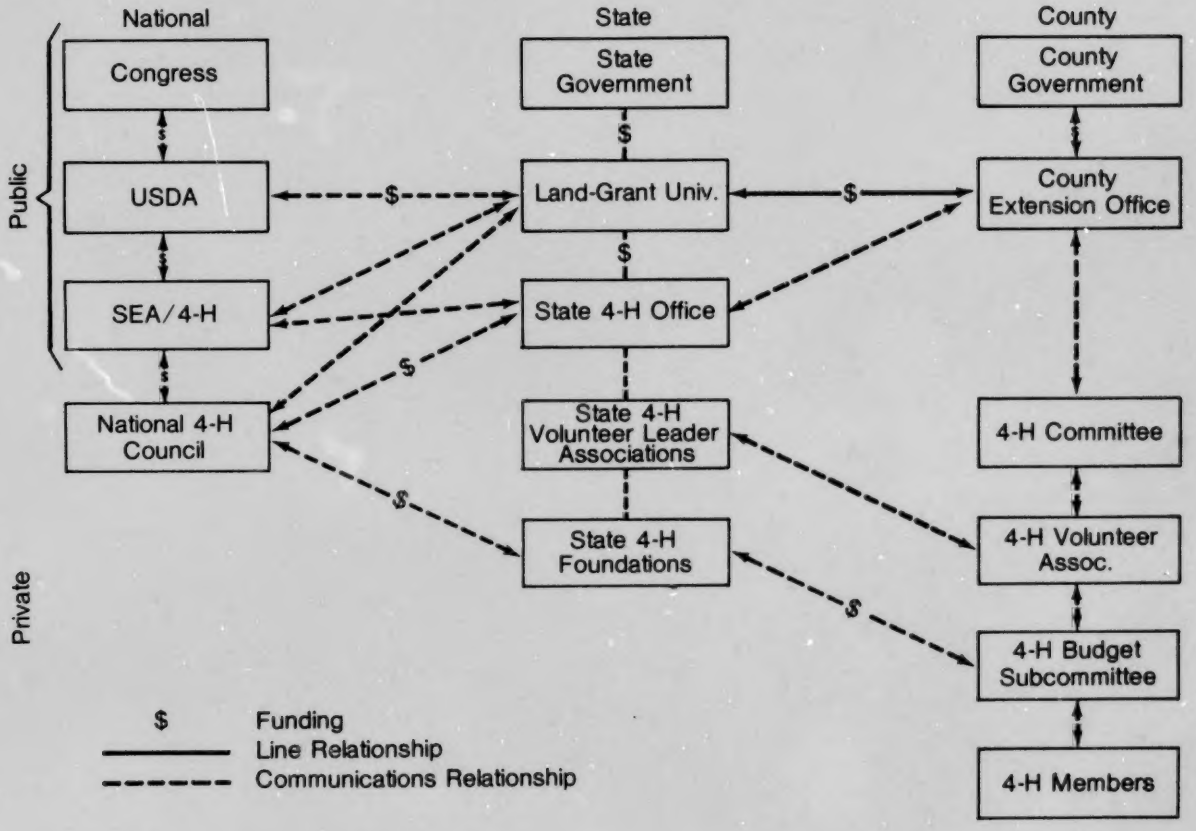
Table 2. 4-H Program Resources by Source, Total Amount, and Percentage of Total Resources for 1976

| Source of Funds and Resources | Amount (Total) | Percentage of Total | Average Per Participant |
|---|---|---|---|
| Public: | | | |
| Federal (USDA/SEA) | $ 57,000,000 | 26 | $ 9.80 |
| State | 63,000,000 | 29 | 10.84 |
| County/City | 30,000,000 | 14 | 5.16 |
| Subtotal | $150,000,000 | 69 | $25.80 |
| Private: | | | |
| National 4-H Council | 9,100,000 | 5 | $ 1.80[a] |
| Local Sponsors (estimated) | 57,000,000 | 26 | 9.80 |
| Subtotal | 66,100,000 | 31 | 11.60 |
| Total | $216,100,000 | 100 | $37.40 |

[a]Fifty-five percent of these funds are used only for awards for national competition winners, so they are not evenly distributed to all 4-H participants.

Figure 1.

## Decentralized National, State, County Relationships



The majority of relationships are based on persuasion and interpersonal influence and, therefore, depend on communication. While the structure appears to be hierarchal with a 10-member Federal staff, a 400-member State staff, and a nearly 6,000-member county staff, operationally, it is not. The influence from the grassroots is so powerful that the structure represents an inverted pyramid. This is not unintentional.

The Federal role is limited. It generally takes the form of (1) providing technical assistance and coordination (among States) in program development activities; (2) maintaining relationships among various internal and external groups (often assisted by staff of the National 4-H Council); (3) assisting States in gaining access to additional program resources (public and private); and (4) developing program materials. An active recent Federal role involves responsibility for implementing affirmative action legislation, especially regarding race, sex, and the handicapped.

The role of the Federal staff is generally one of communicating Federal interests and priorities to State units, coordinating multi-State activities, and assessing and communicating new program ideas. Private sector influence is mainly exercised by funding channeled through the National 4-H Council or State or local foundations.

Between the National 4-H Council and SEA-Extension, there is considerable opportunity, through the projects and awards programs, to provide national direction. Also, as more Federal monies have been earmarked, Federal staff has administered funding-related mandates to the States.

Primary administrative support for 4-H is centered in the cooperating State land-grant university, which usually oversees curricula, organizational rules and practices, and hires and supervises professional staff. This primary administrative role tends to establish the bounds of what 4-H generally will and will not involve and relative program emphasis.

The State unit consists of Extension staff at the various land-grant universities (both 1862 and 1890-Tuskegee Institute). 4-H specialists generally prepare curricular materials, train staff, and oversee events and planning.

Due partly to the nature of their job responsibilities, Extension 4-H program specialists are seldom located in university academic departments. 4-H's connection to universities' researchers usually is through Extension agriculture or home economics specialists.

Also, 4-H lacks an adequate research base in disciplines such as sociology, psychology, and human development, important in dealing with the processes of youth development. The lack of formal contact with faculty representing these disciplines places 4-H staffs at a disadvantage as compared with their colleagues in agriculture and home economics.

The next most influential decision focus is in the community group, where youth and parental volunteers help determine programs, conduct day-to-day activities, and interact with staff.

4-H volunteers can be thought of both as a program input and as a program output. Virtually all consequences suggested for youth apply to volunteers as well. However, were the program effects to be repeated in another form with their labor value to be counted as a cost of operation, one estimate holds the total value of volunteer labor at $546 million annually, or nearly three times all other costs together. Because this labor is volunteered, it can be said that one consequence of 4-H is the development of this human resource opportunity.

The county 4-H or Extension office is the next influential decision center where practices and services are supplied and where local professional staff members are supervised.

At the county level, there usually are one or two professional staff in rural areas (at least one youth agent in 50 percent of all counties). The absence of a full-time staff person generally can be attributed to insufficient numbers of local youth to justify a full-time position, and secondarily, to administrative decisions to assign resources primarily to agriculture and home economics programs. Urban counties tend to have much larger youth staffs (5 to 10 professionals plus numerous paraprofessional and part-time staff). The agent plans and supervises activities, recruits and trains volunteers, and develops local support.2/

At this level, there also is the county committee or volunteer council that generally shares planning and oversight authority with the agent. Agents generally control programs; however, in practice, agents cannot direct citizens or volunteers whose participation they need.

County committee authority varies from being informally persuasive to having significant authority to hire or fire agents, although the former is the most common. These committees, together with 4-H's high use of volunteers (who most often are parents), tend to act as forces supporting traditional activities as opposed to outreach efforts.* This tendency reflects parents' value of 4-H as a vehicle for teaching certain social values and behaviors, as well as skills and knowledge. In some urban areas, agents have utilized nonvolunteer-based methods to reach a large number of youth and to avoid community pressure.

## PROGRAM DIRECTION AND RESOURCE ALLOCATION

The local level is where 4-H members are mostly involved. Traditionally, this has usually meant an organized club, with at least a 1 to 5 volunteer to youth ratio, extensive parental involvement, and year-round activity. Since 1970 and the influx of added Federal funds for the Expanded Food and Nutrition Education Program (EFNEP) and urban programs, 4-H has extensively developed five other types of program units (footnote c) as in table 3.

*In the past, 4-H accountability has been adequately met through widespread adult and parental satisfaction with program operations, and this satisfaction has been expressed and documented in a considerable amount of personal testimonial data from these groups, as well as youth.

Table 3. Types of Local 4-H Involvement

| Type of Program | Percentage Participation[a] | Percentage of Resources[b] |
|---|---|---|
| Community | 17.4 | |
| Project Club | 5.7 | 61.7 |
| School Club | 15.4 | |
| Individual Study | 1.6 | 2.8 |
| Special Interest[c] | 18.8 | 14.8 |
| School Enrichment[c] | 20.8 | 7.0 |
| Summer Camps | 4.1 | |
| Special Camps | 0.7 | 8.0 |
| Day Camps[c] | 2.8 | |
| Television[c] | 6.5 | 2.4 |
| Other[c] | 6.2 | 2.4 |
| Total | 100.0 | 100.0[d] |

[a]Table 6, Vol. I of final 4-H youth evaluation report.
[b]Table 2, Vol. I of final 4-H youth evaluation report.
[c]Relatively new since 1970.
[d]Percentage may not add up to 100 percent because of rounding off of figures.

As a study of 4-H decisionmaking processes shows, because of different values held for the program by the various participants in the 4-H organization, conflicts over program direction and allocation of resources often arise.3/ The study indicates the county agent usually holds a fairly neutral position and attempts to compromise, or the agent sides with the local constituency. Conflict resolution is often difficult because local participants and State and Federal administrators all have access to powerful influence strategies. For example, local agents may use any or all of the following types of strategies:

- Developing "ownership" of programs.
- Terminating support of 4-H and Extension.
- Lobbying informally with elected officials at various levels.

In contrast, State and Federal personnel generally use the following kinds of influence strategies:

- Formal accountability and control (for example, personnel assignment and hiring).
- Tacit support of centralized control.
- Creating incentives through funding and expansion opportunities.

These kinds of strategies are typically used whenever difficult program issues develop (for example, affirmative action, expansion of 4-H into nontraditional subject or geographic areas). The interaction of conflicting values and influence strategies makes it difficult to deal with such issues effectively. This is an unintended consequence of the organizational structure. Its decentralized nature tends to provide an accommodating and negotiable environment, but the decisionmaking process does not always operate so that all interests can be accommodated constructively.4/

When combined with the results of a survey of the States regarding their organizational staffing patterns, the following types of conclusions about the institution of 4-H can be reached:

(1) County 4-H agents normally have a great deal of control over county 4-H program planning and directions.

(2) State 4-H staffs (in most states) have responsibility and authority for State and area (multicounty) program direction and management, including materials and activity design.

(3) Program direction (priorities, activities, participation requirements) is heavily influenced by participation and expressed needs of client groups.

(4) Subject matter specialists' influence on most State programs is meager and limited to indirect impact on program content.

(5) Few 4-H specialists on State staffs have formal linkages to their relevant research bases.

(6) Administrative control from Federal and State levels is not exercised in the planning process except to insure representation and compliance in the case of affirmative action guidelines, to require plans of work and budget development, and to contribute to the general problem definition.

(7) Program controls are vested in client participation and satisfaction and internal professional norms, as well as partial (short-run) controls and resource allocation or personnel assignment.

(8) Program and personnel evaluations are based primarily on process measures because of the longrun nature of most 4-H objectives.

(9) County 4-H organizations operate with a fairly open-ended commitment with only general organizational guidelines specified.

The institutional consequence, therefore, can be described as the existence of a large, decentralized organization in which personnel at the county level have the greatest potential influence because of their numbers and the intentional strategy of serving local needs by involving clients. The large number of volunteers who support 4-H activities suggests a high degree of institutional viability. Funding from public sources is distributed almost evenly between State and Federal funds in the cooperative relationships.

Although the value of volunteers' assistance in the program is estimated to be about four times greater than the total public assistance, the volunteers' contributions are expressed in different currencies. In one respect, the generation of this volunteer contribution is a direct consequence of the input of public funds.

In its decisionmaking processes, 4-H experiences many of the same difficulties of other large organizations although they may be aggravated by the decentralized organizational form of 4-H. The decentralized nature of the structure usually is cited as its major strength. It provides a framework for reconciliation and accommodation of multiple interests and priorities. However, some see this as a major weakness of the program with respect to unity of purpose and response to less visible priorities. They point to the evidence showing that it is the local participants, particularly clients and sponsors, who hold the most parochial values regarding program directions.5/

Even though the Federal influence in 4-H is small, without Federal participation it is likely that 4-H program emphases would be dominated completely by local interests. However, the evidence also suggests that greater centralization, or other overt efforts to exert controls from the top down, would cause withdrawal of support by local supporters.

## YOUTH PARTICIPATION

The most viable consequence of 4-H is participation itself. More than 5 million youth participated in 4-H activities in 1976.* For about half of these youth, it is doubtful that any substitute for this involvement would have been found because most private youth organizations are not very active in rural areas. The situation is probably much the same for parents and other adult volunteers (more than 500,000 in 1976). This impact on rural youth is shown in table 4. The remaining 1.6 million youth were enrolled in the EFNEP and 4-H instructional television program series.

## DESCRIPTION OF PARTICIPANTS

From 1970 to 1976, participation increased from 3.3 to 5.8 million youth. Initially, this growth seems to have been the result of the specially funded programs in EFNEP and urban 4-H (figure 2). However, participation in the more traditional 4-H units also is growing in urban areas even though total participation in these special "outreach" programs is declining because of unchanging funding levels.

These specially funded programs have had a significant effect on the racial makeup of 4-H participation. While 25 percent of a total number of all 4-H participants were from minority groups in 1976, nearly half of this number was in 4-H EFNEP, and almost 60 percent of the minority participants lived in the southern region.

By region of the country, in 1976, 24 percent of the total participants were in the Northeast, 26 percent in the Central Region, 40 percent in the South, and 10 percent in the Western States.

Table 5 shows the distribution of youth participants in 4-H by family income, age, race, sex, and place of residence.

While the relative proportions of youth participating in 4-H differ statistically from those of the national youth population in sex, they do not differ significantly in race. The overall race and ethnic mix of 4-H membership reflects the U. S. population with slight differences because of variation in classifying race and ethnicity. 4-H participants are less likely to come from low-income families and more likely to reside in nonmetropolitan areas.6/

*The definition of participation in 4-H is inconsistent with and between levels of the organization--a situation which makes much of the data difficult to consolidate. Generally, the data reported here reflect a definition that permits the enumeration of youth who participate on one occasion for any length of time. The terms "member" and "enrollment" have no significant meaning outside this definition except in a limited number of States.

Table 4. Percentage of Potential Youth of 4-H Age Participating in 4-H Clubs and Special Interest Groups (1976) by Place of Residence

| Residence Type | Potential Youth | 4-H Enrollments | Enrollment as a Percentage of Potential Youth |
|---|---|---|---|
| Farm | 2,555,007 | 948,561 | 37.1 |
| Towns under 10,000 and Rural Non-Farm | 13,550,272 | 1,626,342 | 12.0 |
| Towns and Cities 10,000 - 50,000 | 3,420,684 | 700,450 | 20.5 |
| Suburbs or Cities of over 50,000 | 12,609,990 | 410,667 | 3.3 |
| Central Cities of over 50,000 | 12,870,409 | 533,169 | 4.3 |
| Total | 45,006,362 | 4,219,189 | 9.4[a] |

[a]Percentage of all potential youth enrolled in these programs. When participation in 4-H instructional TV and 4-H EFNEP is included in the national totals, 4-H reached 12.9 percent of the potential youth in 1976.

Figure 2.

## Trends in Urban 4-H Participation

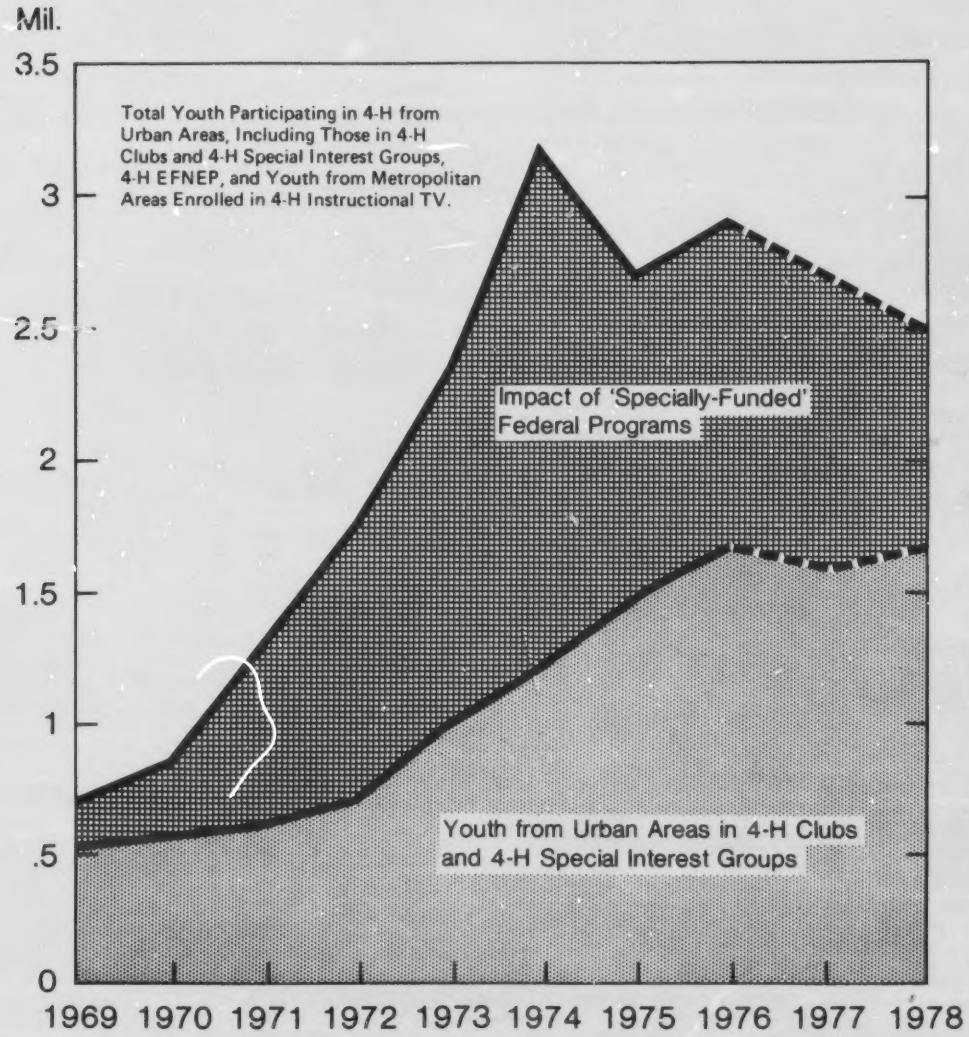

Mil.
3.5
3
2.5
2
1.5
1
.5
0
Total Youth Participating in 4-H from Urban Areas, Including Those in 4-H Clubs and 4-H Special Interest Groups, 4-H EFNEP, and Youth from Metropolitan Areas Enrolled in 4-H Instructional TV.
Impact of 'Specially-Funded' Federal Programs
Youth from Urban Areas in 4-H Clubs and 4-H Special Interest Groups
1969 1970 1971 1972 1973 1974 1975 1976 1977 1978

Table 5. Youth Participation in 4-H: Distribution of Participants in Selected Categories as Estimated Proportions of Total Youth Populations (1970) and 4-H Participants

| Categories | Percentage of Total Youth | Percentage of 4-H Youth |
|---|---|---|
| FAMILY INCOME: | | |
| Over $20,000 | 37.0 | 39.5 |
| $14 - 20,000 | 22.6 | 29.0 |
| $10 - 15,000 | 20.4 | 20.0 |
| Under $10,000 | 20.0 | 11.4 |
| AGE: | | |
| 9 - 15 | 59.0 | 86.0 |
| 16 - 18 | 41.0 | 14.0 |
| SEX: | | |
| Male | 51.0 | 44.0 |
| Female | 49.0 | 56.0 |
| RACE: | | |
| White | 84.0 | 79.0 |
| Black | 14.0 | 16.0 |
| Other | 2.0 | 5.0 |
| PLACE OF RESIDENCE: | | |
| Metropolitan (central cities) | 25.0 | 12.0 |
| Metropolitan (outside central cities) | 41.0 | 10.0 |
| Nonmetropolitan | 33.0 | 77.0 |

Participants also tend to be between the ages of 9 and 12, and the majority are females. Further, a study of 4-H alumni shows that this group is more likely to be living in rural areas and small towns and to be family oriented. They also are likely to be well educated because nearly all 4-H participants finish high school and about half attend college.7/

In 1976 there were a total of 9,269,442 enrollments in projects and activities. The average number of projects per member was 2.2. Enrollments in projects and activities are listed.

| | |
|---|---|
| Animals and Poultry | 1,403,767 |
| Plants and Soils | 747,379 |
| Energy, Machines, and Equipment | 1,014,394 |
| Ecology, Natural Resources | 717,557 |
| Economics, Jobs, and Careers | 157,111 |
| Community Development, Service, Government | 859,299 |
| Leisure Education and Cultural Arts | 1,042,285 |
| Cultural Understanding and Exchanges | 151,733 |
| Health, Personal Development, Relationships | 703,287 |
| Individual and Family Resources | 1,681,418 |
| Communications, Arts and Sciences | 431,034 |
| Introductory, General, Miscellaneous | 324,178 |

Participants stay in the program about 3.5 years, on the average, which means that recruitment of new participants is a continuous, major activity for 4-H.8/ At present, little is known about this turnover rate, how it is distributed, or what effect it may have either on participants or the organization.

While the target population for 4-H programs is in accord with the original Smith-Lever guidelines for Extension activities (all youth), it is clear that only a segment of the target group is presently being served. The primary constraint may be the lack of responsible leaders and program resources at the local level and the values of existing leadership and participants. This judgment is based on the lapse shown in figure 2, between the beginning of the specially funded outreach programs and their relatively immediate impact on participation levels, and the slower growth of traditional 4-H units that depend heavily on local volunteer and parental involvement. Most of this initial growth has been attributed to the efforts of paid staff, especially paraprofessionals, resulting from new Federal funds rather than volunteer, parental dependent involvement.

## UNITS OF PARTICIPATION

The participation of youth in 4-H does not occur informally. Rather, youth participate through highly structured educational settings.

As with any educational setting, certain general features are incorporated into the "units of participation" such as types of individuals involved, kinds of structures established among those involved, instructional technology and content, and supplemental reinforcement techniques.9/

What makes 4-H units different and effective when compared to public schools and other youth groups are the following minimum specific elements: (1) time on task, (2) degree of parental activity and involvement in the formal unit and at home, (3) range of subjects taught (including recordkeeping, public speaking, and group leadership skills), (4) depth of subject covered, (5) social and external reinforcement, and (6) nature of the learning experience (for example, learning by doing, practical experience).

For example, the traditional 4-H club holds the reputation of being an effective educational setting for the youth involved. Several features are considered of particular value, "either because they are not well covered in other learning experiences or because they are so important that covering them for a little longer time is well worthwhile, because no saturation occurs in the regular school or other context in which partial learning occurs."10/ These features include:

- Practical value of the usual task (for example, maintenance of useful equipment).
- Formal and impromptu public speaking.
- Maintenance of written records on work done.
- Group leadership experience.
- Experiences with a variety of public institutions.
- Emphasis on rational decisionmaking processes.

Besides the 4-H club, six other units of participation have been defined by this evaluation. They are individual study, special interest groups, school enrichment, camping, instructional TV, and cooperative activities with other youth organizations. There are three types of clubs--community, project, and school clubs--and three types of camping activities--traditional (week long), special purpose, and day camps. The units differ in the following ways with respect to the six elements listed earlier.

(1) *Clubs*--The three types of clubs all are focused around continuing, year-long activities. Youth "projects" are subject matter units derived from the concept of demonstrating new technologies and practices (members learning about agriculture, raising and selling cattle, sheep, corn). Instructional strategies center on one-to-one interaction (with an adult) and learning by doing. Community clubs and project clubs differ only in the number of different project subjects offered. Both are dependent on volunteer instructors and high degrees of parental activity. Club meetings are frequently attended by one volunteer per five youth, and an average of one parent per family. School clubs are largely limited to the South and tend to be conducted within the school by teachers. Therefore, time and tasks are similar to those of other clubs, but lack the parental involvement. The community clubs are further distinguished by emphasis on group development and personal leadership development.

(2) *Special Interest Groups*--These groups range in intensity from groups that are virtually indistinguishable from small clubs to one-time workshops. Most are short-term--1 day to 3 months--and built around knowledge and skills in one specific area. Instructional strategies tend to focus on lecture and demonstration and some applied experience. Usually, there is little parental involvement.

(3) *School Enrichment*--4-H provides curriculum packages, trains teachers, and sometimes conducts in-class lessons in some schools. Such programs usually are of short duration (1 day to 2 weeks) and subject specific. Instructional strategies tend to involve classroom lecture and demonstration. Usually there is no parental involvement, although one or more volunteers occasionally may assist the teacher.

(4) *Individual Study*--A few youth participate in 4-H by reading materials and conducting work as individuals. Parental help may be necessary, but group interaction is lacking. These participants usually conduct the same type of year-long projects as do club members.

(5) *Camps*--Two of the three types of camps (summer camps and special camps) are largely redundant to 4-H club participation. They provide away-from-home experiences in group living. Day camps are usually 3-5 day special interest activities in urban or suburban neighborhoods. Instructional strategies focus on planned and directed adult-youth interaction and recreation. Even in summer and special camps, the parental involvement is comparatively low and the ratio of adults to youth is smaller than in the club settings. The project focus of emphasizing recordkeeping and competitive events usually is lacking.

(6) *Instructional TV*--A large number of youth, particularly in the younger age groups, are served by special television series, especially the EFNEP funded nutrition series--"Mulligan Stew." It usually is delivered through the school classroom with little reinforcement.

(7) *Other Youth Organizations*--4-H sometimes collaborates with other agencies in developing joint programs. These often are built around 4-H's curricular materials and other agencies' funding or staff work. These activities are varied, but the 4-H role generally is similar to that of school enrichment.

These different units of participation tend to function fairly independent of one another within a county, even though the same staff may serve all. EFNEP and urban 4-H funding is in part responsible for the development of many as outreach efforts. One major study in an urban county showed virtually no transfer of youth from one unit to another.11/

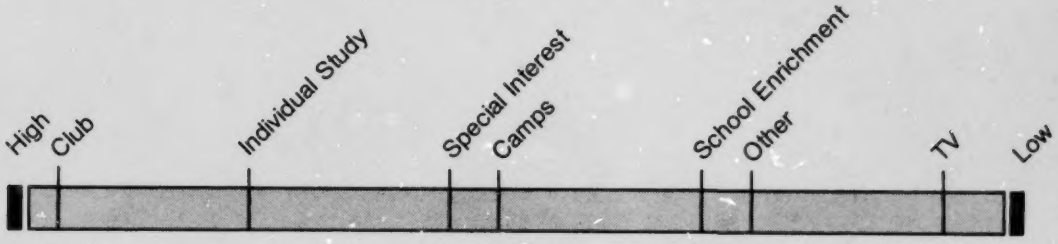
Some educational research has indicated that because people have different learning styles and needs, diversity in educational format is desirable.12/

The fact that these diverse strategies can generate youth participation tends to substantiate this to some degree. However, these diverse methods could be better integrated with one another and be more effective in effecting consequences.

While major factors producing individual impacts have been explored, figure 3 arranges the various units of participation along a continuum defined by the expected effectiveness of the various treatments in producing consequences.

Figure 3.

## Comparative Effectiveness of 4-H Units of Participation in Producing Consequences




The rankings depicted in figure 3 are relative and general although when any one category of consequence is considered, the specific order may change slightly. For example, some specific types of knowledge (highly technical materials) are more easily presented by TV than through a special interest group. Attitudes toward others as individuals will be more effectively learned in a club or camp unit than in individual study or through television.

### CONSEQUENCES OF PARTICIPATION

Many consequences can quickly and easily be correlated with 4-H participation. However, establishing cause beyond various levels of probability is difficult. There virtually are no consequences reported here for which nationally generalizable proof has been established. However, because the focus has been on analysis of 4-H's causal role rather than on correlation and assumed causality, all consequences reported are reasonably and appropriately inferable at the national scale.*

Among the most easily definable and documentable consequences of participation in 4-H programs are individuals' gains in knowledge, skills, attitudes, values, and personal satisfaction. These impacts can be illustrated as follows.

*From this exercise has come the establishment of a theoretically sound and reasonably rigorous evaluation approach for use and elaboration as the basis for a national 4-H impact evaluation strategy.

## KNOWLEDGE

Knowledge probably is the most extensively documented consequence of participation. Participants learn about subject areas studied and about various social expectations and roles. Knowledge involves simple data acquisition in such activities as learning how a cake is made, dresses are sewn, homes are wired, or cars are repaired. Knowledge gains researched in 4-H tend to involve knowledge of how mechanical, biological, social, economic, or other systems or entities work, and how to create, repair, or maintain them.

Obviously youth can gain knowledge in many ways from numerous sources in our society. 4-H may be instrumental in delivering some knowledge to more youth than otherwise might get it, but highly motivated youth likely could gain most knowledge offered by 4-H in another manner. As the knowledge gained becomes more technical and specialized, as it does within the 4-H club for older youth, this redundant effect decreases.

A special category of 4-H knowledge that has repeatedly appeared in this study is its emphasis on the process of rational decisionmaking. The process is little emphasized in most programs for youth of this age. Because 4-H historically served to demonstrate new practices adults would not adopt, 4-H may still be serving a key role for other Extension programs in orienting future clients of adult programs to rational data-based processes.

Knowledge gained in 4-H generally is not sufficient for vocational adequacy. However, it tends to be first-hand, experiential in nature, and complements other more abstract learning. Research indicates 4-H to be an effective deliverer of knowledge.

## PERCEPTUAL AND COGNITIVE SKILLS

Because of the strong emphasis on "learning by doing," youth also improve or acquire perceptual and cognitive skills. Development of these abilities is encouraged by the reinforcement the clubs provide through adult and senior teen role models and their practical expertise.

Perceptual skills are developed through project activities, particularly those that involve the judging competitions (dairy or beef, lamb, swine, crops, soils, clothing, food preparation). Nutrition and health programs undoubtedly do the same things. For example, 4-H club activities require that knowledge be demonstrated or applied in the selection of food items from the basic four food groups to comprise a nutritious menu. Although the perceptual skills are somewhat abstract, the leadership activities also develop perceptual skills.

Cognitive skills involve integration of knowledge and perceptual information to produce understanding and permit the transference of knowledge from one situation to another.

Considerable documentation of the impact of 4-H in the development of cognitive skills is available. This can be illustrated in the following examples.

· In the Ohio urban 4-H program, it was found that youth enrolled in 4-H gained cognitive skills and competencies in their project areas that would be useful in other aspects of their lives.

· A lamb project in Montana produced knowledge that youth were able to apply in the care of domestic pets.

· Members of a Wisconsin 4-H program showed a significant increase in their mental age relative to nonmembers.

· In a Texas 4-H program for low-income and disadvantaged youth, participants showed a significant increase in their ability to plan for changes in their lives.

These examples illustrate the effect of logical structure as used in the design and implementation of 4-H projects, a structure that encourages systematic investigation of factual information, determination of alternatives, evaluation, and decisionmaking. There are even some projects that deal directly with aspects of cognition (for example, work simplification).

## PSYCHOMOTOR AND MOTOR MUSCULAR SKILLS

To some extent, participation in 4-H club activities improves psychomotor (hand-eye coordination) and motor muscular skills. These are skills that permit youth to "do" things, thereby demonstrating the acquisition of knowledge.

Evidence of these manual skills may be found at any county or State fair across the nation or any other of the many public events that 4-H sponsors. In most cases, development of skills in this area has been treated as "self-evident." Few empirical studies have been done to support or refute this claim.

It is suspected that, even in the 4-H clubs, 4-H is, at most, only instrumental in this area. It is more likely that it is mostly redundant in effecting change in this area because numerous other opportunities (except for youth in early adolescence) are presently available for youth to develop these skills.

## ATTITUDES AND VALUES

Attitudinal changes may be "inner-directed" or prudential, or they may be "outer-directed" or social in character.

Examples of the kinds of attitudes encouraged or changed by 4-H include "motivation" to pursue individual and group goals constructively, "an appreciation for individual differences," and "an appreciation of returns from the expenditure of effort."

Other demonstrated consequences include changed attitudes toward health care practices (preventive) and nutritionally adequate diets; positive changes in self-concept and self-reliance, and reduced alienation; improved attitudes toward wise

personal money management and purchasing habits, child care, careers in child care, parenthood, and education and civic responsibilities.

Additionally, a study in Wisconsin showed a more significantly positive attitude toward adult education among adult former 4-H members than non-4-H members, suggesting that the impact of 4-H has a lasting and long-term effect.

There also is some evidence that certain other consequences are produced relevant to this area. These are mentioned separately because they often have been judged as "detrimental" consequences. Observers often mention that 4-H participants are highly "achievement oriented" or competitive--an attitude that may result in behavior such as cheating on records or preparing projects for competitive events.13/ High achievement orientation also may cause some youth to be smug and overconfident because of the amount of recognition they receive; conversely, high achievement orientation may alienate such youth from peers and create stress and anxiety.*

## SOCIAL BEHAVIOR

While considerable evidence exists that 4-H has an impact on participating youth, two limitations of the evidence developed in this evaluation should be noted.

First, the same categories of impacts could be expected of other youth development programs.

Second, the presentation of such consequences implies that all participants are equally affected, which is not likely. Obviously, there will be differences among individuals. More importantly, there probably will be differences across groups of individuals or segments of the youth population.

To what extent this occurs is unknown. It is expected that the length of time one participates in 4-H is a major determinate of the overall effect. Because the average tenure in 4-H is about 3 years, and participation is concentrated among the younger age groups, the real impact may be limited to a small segment of youth. The lack of information in this regard prevents a definitive answer so the question must remain unanswered.

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*The need to achieve is considered to be one of the basic personality drives of the individual, and while this area has been greatly studied, there still is insufficient understanding of the constructive nature of this psychological drive. Generally speaking, it may be said that detrimental consequences are produced not by the development of attitudes of high achievement, but rather, the inability to channel this drive into constructive and creative actions and decisions. Nevertheless, it is a problematic consequence area for 4-H and deserves more intensive consideration.

While the consequences that affect individuals are important to document, the Extension evaluation policy group has taken these consequences for granted. Instead, the evaluation team was urged to consider consequences of a "higher" order, that is, "social and economic" consequences.*

Higher order consequences tend to build on aggregated individual impacts. The evidence available is less reliable and applicable to the entire set of participants.

One such category of consequences involves behavior (individual and social). Manual skills already have been discussed. Other individual behavioral changes involve communication (through public speaking activities), sociality (getting along with and working with others), and leadership. These types of behavioral changes are manifested in greater involvement of youth in community and family organizations and activities as well as schools, as documented in numerous studies.

Parental and other adult observers have reported reductions in "asocial" behaviors in youth participating in urban 4-H programs, and there is some evidence that 4-H participants have a positive impact on peers in the same regard. Other behavioral changes reported include changes in the choice of leisure time activities, increased frequency and visibility of leadership type behaviors, and expanded interactions resulting from enlarged friendship networks.

In an evaluation of the impact of a career exploration project for low-income disadvantaged youth in Missouri, for example, it was found that of the 150 initial participants, 51 were enrolled in vocational programs, community colleges or universities; 3 were in the military; 64 were employed earning more than a minimum wage; and the remainder were either married and not employed or were not located in the followup study.

Besides the manifested behaviors of individuals, other types of social behavior which are affected by 4-H include "social standards" and "social behavior." The term social standards refers to the "official value system" of espoused principles that may be formally (legal prescriptions) or informally established (norms for responsible citizenship in America). For example, participants in 4-H usually are somewhat more likely to be "law-abiding."

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*It has been shown that there are a number of important individual-level consequences, some (acquisition of knowledge) accruing immediately and others over a longer period of time (cognitive skills). There also are effects which accrue to small groups or organizations (families, communities), and to social and economic institutions as an aggregate of the individual consequences. For example, the acquisition of and appreciation for technical knowledge by youth provides improvements in the technical expertise of the work force. Income produced from 4-H projects (sale or prize-winning livestock, sales of home-grown product) increases family income and the economic vitality of communities. It also may result in changes in the distribution, as well as overall level, of income in communities or regions.

In one case, the examination of census tract data in the areas of Detroit served by an urban 4-H program showed that juvenile offenses in these areas declined significantly. The fact that this impact was recognized and attributed to 4-H by local police and community officials gives added weight to similar impacts that often have been claimed, but rarely documented, by 4-H leaders.

Similarly, 4-H emphasis on private enterprise and economic rationality seems to have a long-term effect because large numbers of 4-H alumni attribute some portion of their success in business endeavors and professional careers to their participation in 4-H as youth.

The emphasis of 4-H on the primacy of the family as a nuclear institution is supported by the involvement of many parents in 4-H and the fact that surveys show a significant portion of persons who have had 4-H experience are members of nuclear families.

The term social behavior refers to the "true" values expressed by behavior of large numbers of individuals or social groups. This type of behavior often contradicts espoused principles or official standards as in the case of de facto segregation.

The factors that produce such effects are obviously complex and often "unintentional." For example, it can be expected that 4-H programs will increase community integration into higher level systems such as national and State systems because (1) the 4-H programs are made available to communities rather than forced on them, and (2) the decentralized nature of the 4-H organization increases the likelihood that programs are influenced by and consequently acceptable to communities. This integration effect is most likely to be felt in the context of shared goals and structures.

## COMMUNITY EFFECTS

Another inferred consequence of 4-H is that the program should directly increase the amount of knowledge and information available within communities as well as within society as a whole. This should lead to the development of new norms regarding acceptance and utilization of new information--a well-documented consequence of 4-H in its initial years but generally ignored in contemporary studies.

Future new emphases in 4-H (for example, energy conservation) may eventually provide evidence of similar consequences.

Another related impact should be the increased capacity of communities and society to receive and process new information, as well as the degree to which new information is used or acted upon.14/

Effects pertaining to individuals as group members generally involve widened friendship circles, development of social skills, and changes in social attitudes and behaviors. Consequences also include increased interaction with a broad range of people through exposure to new environments, changes in beliefs, and changes in

patterns of interactions among social groups. It can be concluded that increased interaction across and among groups in communities improves integration of that body.

Many of the consequences pertaining to individuals involve career aspirations--acquisition of information about occupations, commitment to a career through education and employment plans, and increased and improved planning for careers. This is an area of 4-H strength since the mid-1920's when the program focus on vocational preparation began. Its abilities in this field are widely respected.15/

Consequences regarding individuals as community members include experience participants receive from taking on the roles of citizen and leader, leadership with other groups or the community-at-large, and changes in the manner in which communities and agencies are governed and managed.*

Consequences affecting families include increased interaction and cooperation among family members, sustained changes in interpersonal support and collaboration in families, and changes in attitudes of 4-H members toward families and family relationships.

## CONSEQUENCES OF PROGRAM METHODS

Participants involved in only one or few 4-H activities can be expected to experience a limited effect unless that participation is centered in one of the club modes. Yet, youth participation across the nation does not center on the 4-H clubs for all types of youth.

Regional and national distributions of 4-H participation by treatment are reported in table 6. The Midwest has greater emphasis on the community club (30.6 percent). The Northeast gives greatest attention to school enrichment and working with other youth groups (38.2 percent and 14.5 percent respectively). The South has a high concentration of youth in school clubs (34.6 percent). The West has a rather even distribution across several units.

While youth generally are offered the full range of 4-H projects and activities, some special programs do exist. These include the summer community enrichment program and the child-parent community housing project designed to develop leadership and broader participation in community life. These programs are active only in the southern States. If the data representing 4-H participation and activities in these States are removed from the national data, the total program looks significantly different.

*Studies of community leadership in West Virginia and Kentucky show that more than one-third of those in leadership positions received their first leadership development experiences in 4-H, either as youth participants or adult volunteers.

Table 6. Regional and National Distribution of 4-H Enrollment Per Delivery Mode by Percentages, April 1979[a]

| | Northeast | Midwest | South | West | United States |
|---|---|---|---|---|---|
| Community Clubs | 10.4 | 30.6 | 11.5 | 18.7 | 17.4 |
| Project Clubs | 3.5 | 4.4 | 3.7 | 20.4 | 5.7 |
| School Clubs | 5.1 | 2.4 | 34.6 | .7 | 15.4 |
| Individual Study | .4 | 3.6 | 1.0 | 1.0 | 1.6 |
| Special Interest | 20.3 | 14.1 | 20.1 | 23.5 | 18.8 |
| School Enrichment | 38.2 | 16.5 | 15.7 | 15.7 | 20.8 |
| Summer Camps | 2.1 | 8.1 | 2.4 | 3.4 | 4.1 |
| Special Camps | .3 | .9 | .7 | .5 | .7 |
| Day Camps | 1.3 | 4.8 | 1.6 | 5.1 | 2.8 |
| Television | 3.8 | 7.2 | 6.6 | 9.4 | 6.5 |
| Other | 14.5 | 7.2 | 2.1 | 1.7 | 6.2 |
| Total | 99.9 | 99.8 | 100.0 | 100.1 | 100.0 |

[a]In some instances, States reported enrollment figures representing more than one delivery mode. Such figures have been incorporated into this table by dividing them according to the proportions obtained for those delivery modes for the region to which the State belongs.

National figures show that school enrichment programs reach the greatest number of youth. Close analysis by place of residence indicates that most of the minority participation results from the specially funded EFNEP and urban 4-H efforts. These activities tend not to be centered in clubs, particularly in regions outside the South.

Because 4-H has tended to utilize some units of participation that have less impact when serving previously unserved groups, some unintended institutional, economic, and racial discrimination almost certainly exists. There are significantly more minorities, urban, and low-income youth in low consequence units of participation than in high consequence units.

Paradoxically, this is a result of a conscious outreach to these groups. 4-H has succeeded in involving previously unserved constituencies but has overlooked the issues of equity of results in the process. There is some evidence to suggest potential change in this pattern as minority participation in clubs, special interest groups, and camps is slowly increasing (figure 3).

## SELECTIVE NATURE OF THE PROGRAM

With regard to the overall health, wealth, and quality of life of American youth, little can be said about the 4-H contribution. While this evaluation shows that important and substantial consequences occur affecting individuals, there is little evidence that would allow the parceling out of the contribution of 4-H.

Research in education has shown the dominating influence of socioeconomic factors in education achievement. Because so many 4-H alumni achieve generally high levels of education, 4-H may be supplementing these factors. It also is likely, however, that most 4-H participants would either find or develop substitutes for 4-H involvement and participation, or even doing without, would accomplish just about as much. 4-H participation may help less-advantaged youth reach equally high levels of achievement, but existing data do not permit substantiation of that hypothesis.

Redundancy of impact is further supported by data on the distribution of participation; even though the "official" target population for 4-H is "all youth ages 9 to 19," the distribution data show urban and low-income youth relatively underrepresented in 4-H.

It should be noted that the 1890-Tuskegee Institute programs have elected to direct their major program efforts to reaching low-income youth and new youth audiences. This decision generally is reflected in the selective placement of personnel.

## TYPE OF NEEDS SERVED

The "needs" that are served by 4-H are those that might be termed the "normal, developmental needs" of youth. These include the development of positive self-images,

problem-solving and decisionmaking abilities, appreciation for the function of social norms and values, and regard for others' rights as individuals. If such needs are not met, youth development may take abnormal directions, channeling energies into pathological behaviors.

The development of youth in this context is enhanced by group experiences and typically has been the function of the family unit, although its contemporary effectiveness in this area is being seriously questioned.

In a pluralistic society, it can be argued that programs for normal youth are as necessary as those for youth with "problems." There is some evidence that youth with problems can benefit from programs for normal youth. There also are instances where agencies that provide treatment programs for youth also have 4-H programs available to youth clients.

Clearly, there are a large number of youth in America who are more "needy" than those presently served by 4-H. A large number of youth today have significant problems as indicated by statistics on juvenile delinquency, drug abuse among young people, and unwed mothers. There is some evidence that 4-H pilot programs that have dealt with some of these needs have been at least partially successful, such as the 4-H parenting program focused on unwed mothers. Generally, the feeling is that most of these problems require remedial treatment in the form of "therapy" rather than "education." (This debate also continues in the general field of education.)

This belief is compounded because there has been no final resolution of the controversy internal to 4-H as to whether or not the program is supposed to be interventionist or preventive, or both. The debate has tended to be dominated by a strict interpretation of the Smith-Lever mandate, and a preference for education to prevent rather than cure behavioral abnormalities.

## DIFFICULTIES OF CHANGES

Changes in the 4-H program are likely to be difficult for two reasons. First, the 4-H program receives its most important direction from participants at the local level--youth, parents, and adult volunteers. These supporters view the program as teaching or emphasizing values that they deem important. As a result, they tend to influence program direction toward a status quo situation, resisting attempts to move 4-H in any direction they perceive as threatening this basic character.

Because half of the program resources are derived from local sources and volunteer support, the threat of withdrawing this resource carries tremendous influence on 4-H professional staff. Because this "input" is deemed important from a policy as well as a programmatic standpoint, professionals also refrain from any activist role in program development. This orientation is supported by both structural and process factors in 4-H and will, therefore, be difficult to change.

Second, program planning and management decisions are made with little appreciation for how consequences are produced or for how they are related to program input decisions.

The definition of the target population as "all youth ages 9 to 19" ignores the differential needs of youth and the differential effects of 4-H educational treatments. This has led to the development, albeit unconsciously, of the institutional economic and racial discrimination pattern. 4-H professionals have not learned how to relate the most effective dimensions of the 4-H experience to the needs of minorities and disadvantaged. This is so despite experienced failures and rejections and despite research that shows that the learning styles of such groups tend to be different and that they respond adversely to such elements as competition in group activities.

Further, program monitoring is incomplete, although until now little in the way of comprehensive program review has been accomplished to decide what should be done. Program objectives generally are immeasurable and little is done to require them to be stated in measurable terms. While program decisions of this sort must be made cooperatively, this is not inherently in conflict with making decisions to correct the weakness. The current process, if somewhat faulty, still is an extremely active and negotiative one.

The reduction or withdrawal of Federal resources would impair opportunity to influence program direction toward national youth needs. At present, the Federal partner in 4-H has only limited influence in affecting program direction and priorities. However, the impact of the specially funded programs--EFNEP and urban 4-H--in reaching special populations indicates that this influence is of consequence.

As decisionmaking studies show, even its limited "stake" in the program gives the USDA a voice in negotiations over those decisions that must be accommodated. Because the disincentives (withdrawal of local support) presently outweigh the incentives (funding levels in special programs) in establishing and implementing innovative programs in 4-H, the quality of Federal leadership is important if the Federal influence is to be effective.

Most importantly, this evaluation has shown that the 4-H program has high potential for producing consequences of considerable value. In the process of attributing value, it can be said that societal values exist that support the position that "more knowledge is good," "more cognitive skills are good," "more positive attitudes and constructive behavior are good," and so on.

Because it has been shown that 4-H produces more consequences of value for those who participate than detrimental consequences, it clearly has considerable potential for doing more. Similar arguments could be made regarding the inferred consequences of higher order such as promoting the more extensive use and adoption of technical information or maintaining the viability of rural communities in the United States.

Even though these consequences require extensive verification and quantification, they are important and deserve serious consideration by all those involved in 4-H. For while 4-H is a program of high potential for youth development, serious questions have been raised regarding its failure to realize that potential more fully and equitably.

## A COMPARISON WITH OTHER YOUTH PROGRAMS

While it was difficult to get detailed information from other youth organizations in the United States which might be comparable to 4-H, the information provided in one study indicates several differences between 4-H and other youth groups. One is the size of the 4-H organization--professional staff in 3,200 counties, volunteers, participants, university subject matter specialists, program materials, and local program decisionmaking.16/ No other national youth group is as huge and intensively supported. Other differences emerge when youth programs are compared at the local level in terms of organization and impacts on youth.

For example, the Boy Scouts generally serve about the same population of male youth, but the subject matter is more limited and parental involvement is more narrowly defined.

Boys' Clubs generally serve a population not extensively reached by 4-H--inner city youth. Their formal programs are oriented toward personal growth and recreation with almost no parental involvement and little adult interaction except for paid staff.

While the conclusion is only tentative, it is likely that 4-H can have broader impacts on participants than other youth groups, and can provide a quality educational program to more participants than any other youth group currently organized in the United States.

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# VI.
# Community and Rural Development

## VI. COMMUNITY AND RURAL DEVELOPMENT

Most Extension educational programs have as their primary objective individual adoption, change, or improved capacity. The community and rural development (CRD) program is directed at group problem solving. It affects a community and attempts to influence the way in which problems are handled rather than promoting adoption of a particular solution.

More attention is being given to community problems today because of increases in population, changes in living patterns, developments in technology, changes in governmental and social structures and concepts, concerns for the environment, and costs of providing facilities and services. The problems include inadequate housing, uneven distribution and high costs of health services, job shortages and low incomes, lack of safe water and sewer systems, increased volume of solid wastes, competition for natural resources, complex government regulations, and conflicts in values.1/

The overriding challenge is finding ways to deal with these problems. Any group must:

- Understand the problem.
- Know what are the choices and the trade-offs.
- Know how to work with others.
- Know what help is available and how to access it.

Different kinds of help are available from a number of Federal, State, and local agencies and organizations in the form of money, technical assistance, and services. A community group finds difficulty in knowing when and how to use the right kind of help for its particular problem. For example, a community with a housing problem needs to know when to approach Farmers Home Administration (FmHA), Housing and Urban Development (HUD), Community Services Administration (CSA), State housing authorities, municipal governments, environmental protection agencies, church groups, local housing organizations, or builders. Such problems generally are more difficult for people from rural communities who often are governed by part-time elected officials and have few professional staff members and limited resources.

Communities want to know what is possible, and they want help in determining what to do, how to do it, for whom, and with what. Extension helps communities in the decisionmaking process through its community and rural development program.

Extension workers do this by helping persons from all parts of the community work on their problems, discover their choices, learn how to work together, and

determine what help to use. Extension workers also help the group acquire needed technical knowledge, either from their own educational background or from other sources.

The community group selects the problems to work on, makes decisions, and takes action to reach objectives selected by the group. Extension's objective is to help the community group reach its goals. The community's goals are not those of Extension, but achievement of a community's goals is evidence that the process of decisionmaking worked.

Extension is providing assistance to more than 50,000 community development projects involving approximately 2.5 million citizens. Projects and the supporting education program focus on jobs, economic development, housing, and community services and facilities. Some 125,000 citizens and officials also are receiving assistance related to local government finance, management, and operations.

Extension nonfarm rural development funding increased from $23 million in fiscal 1970 to $54 million in fiscal 1977. For fiscal 1977, approximately $20 million was Federal funding and the balance was provided by States and counties. The Federal portion of rural and community development activities steadily increased each year through 1978.

Increased emphasis on rural development research and Extension in the late 1960's and into the 1970's, in part, reflected national goals directed toward raising the living standards of rural Americans. Projects during this period became sharply focused on job creation, family income improvement, effective resource utilization, better delivery of services, coping with population change, and providing rural housing.2/

## PROGRAM DESCRIPTION

The purpose of the community and rural development program is to provide professional organizational leadership, management education, and technical assistance to local people in identifying, defining, and meeting their needs and aspirations using public investment programs and private initiatives to achieve their goals.

The Extension system, through staffs located in almost every county in the United States, attempts to assist the people in rural communities facing these situations. County Extension agents, supported by State specialists with technical knowledge in most major disciplines, provide assistance (leadership, organizational, and technical know-how) that helps local citizens to affect changes in their communities.

In conducting the CRD program, Extension develops leaders and assists local citizens to organize into effective groups for the purpose of identifying and solving community problems through:

- Promoting cooperation among the different segments of the local population and the various interest groups that impact upon the community.

- Teaching local citizens how to mesh their goals and aspirations within constraints of private sector decisionmaking and local public policies.

- Providing educational information on alternative ways to solve particular problems and to address various aspects of public issues and policies.

- Providing technical assistance and information in developing and conducting feasibility studies, surveys, and action plans for fulfilling community objectives.

- Helping integrate the allocations of public and private resources with the needs and aspirations of the community's citizens.

Decisions of State Extension Services to make available to citizens of an area (county, multicounty, municipality) additional specialist staff with knowledge and skills needed to be "itinerant teachers" in community and rural development are based on:

- Studies of demography, economics, and sociological considerations of the community.

- Studies of objectives, needs, problems, and aspirations of the people in the community, including setting priorities.

- Assessment of the probability that an Extension agent or specialist could make a difference.

- Assessment of the extent to which community objectives are being met and problems solved without the presence of an Extension specialist.

- Proportion of geographically, socially, or economically isolated persons* in the community who are not being served by other efforts and who could benefit from Extension's help.

- Availability of funds to support a staff member over an extended period of time. This would be long enough to develop, among those who have the problems and who must be able to use this kind of assistance, the knowledge and skills essential in making a difference in achieving community objectives.

- Competition among communities with the greatest level of need.

*The term "isolated" applies to racial or ethnic minorities, handicapped, aged, youth, low-income people of any race or ethnic background, as well as those located in small out-of-the-way places.

The Federal contribution to this local decisionmaking process involves (1) sharing of information among States on regional and national issues, (2) providing leadership and management assistance to programing efforts that address problems of national or regional significance, and (3) providing special project funds to encourage innovative programing efforts in addressing problems or issues of national or regional concern.

Facilitating, training, and educating is central to the CRD program. The direct leadership role which might create dependency of community members on Extension field staff is not encouraged.

The objective of helping communities and their leaders make the best decisions possible based on reliable information and on facts is accomplished when citizens and groups recognize and follow sound decisionmaking principles. Whether providing the best available information or generating new information, stress is on demonstrating and encouraging its use.

The process used extensively by field staff in CRD educational efforts, placed in its typical sequence is:

- Identifying problems, needs, aspirations, and directions for solutions.
- Integrating involved community people into the decisionmaking process.
- Identifying and involving both internal and external resources.

## CLIENTELE IDENTIFICATION

The current CRD effort in assisting local governing bodies and citizen groups is nondiscriminatory with respect to the socioeconomic level of the group to which assistance is provided. The group essentially selects itself by identifying its need for Extension assistance. Extension selects CRD clientele only in the case of special efforts with socially, economically, or geographically isolated groups which Extension purposefully seeks out.

The assignment of an Extension CRD staff member to an area is based largely on assessments of a community's need for assistance relative to needs in other communities.

Once an Extension CRD program staff member is placed in the community or in an office where he or she can serve a number of communities needing services, programs are developed in response to needs identified.

PROGRAM INITIATION

The most pressing needs felt by local citizens or governing officials, when they want help immediately and when they are willing to commit themselves, are identified in three ways. Extension's programs are designed to respond appropriately.

(1) *Citizens' group initiated programs*--A large share of programs are initiated by individual citizens or citizen groups when they request assistance to meet their educational needs or to resolve development problems.

(2) *Local government initiated programs*--Some programs are initiated by officials of local, State, or Federal governments when they request assistance in resolving development problems, in dealing with conflicts among different segments of the community's population, or in coping with demands that come from outside the community (for example, Federal legislation, State legislation, or changes in resource allocations by the private sector).

(3) *Extension initiated programs*--Some programs are initiated by Extension professionals to deal with problems they discover in the course of working on other problems in the community, in completing community studies, in response to legislative initiatives of the Congress or State government, or in assisting geographically, socially, or economically isolated client groups.

State CRD leaders perceived citizen groups as initiating programs more frequently than local governments or field staff.3/ In contrast, program participants involved in 52 selected case studies saw Extension field staff as more frequently initiating programs.4/

This difference was found in the perception of clientele of CRD programs. When the case study projects, which were specifically designed to serve geographically, socially, or economically isolated clients were excluded, groups were the most frequent initiators.

Table 1. Source of Program Initiation, 52 Selected Community and Resource Development Case Studies[a]

| Program Initiators | All 52 Selected Case Studies | Excluding Case Studies Specifically Designed to Serve Geographically, Socially, or Economically Isolated Clients |
|---|---|---|
| Citizen Groups | 30 percent | 50 percent |
| Local Governments | 20 percent | 25 percent |
| Extension Staff | 50 percent | 35 percent |

[a]See Note 4.

These figures suggest that projects specifically designed to serve geographically, socially, or economically isolated clients are more likely to be initiated by Extension. With these clients, Extension performs an "activist" role, providing opportunities for needs of these special audiences. CRD clients surveyed nationally believed programs were consistent with needs of people in the counties where programs were conducted. Approximately one-third of the case study projects were designed specifically to serve clients classified as geographically, socially, or economically isolated from the mainstream of American life.

## CLIENTELE

The number of assignments that Extension can accept is constrained. With the typical time requirement per project, only about 10 percent of the more than 32,000 local (political) subdivisions in the United States can be served by the current number of professional Extension CRD program staff. Most CRD workers concentrate their efforts where local needs are perceived to be greatest, either by local citizens or by Extension staff; however, the presence of a CRD agent frequently surfaces needs which have not been expressed by local people.

Nationally, the potential clients* of Extension programs number 63 million persons. During fiscal 1978, Extension CRD field staff made nearly 6.5 million

*Potential recipients are members of any public or private agency, institution, organization, or entity, as well as other individuals residing in small cities outside Standard Metropolitan Statistical Areas (SMSA's), towns, villages, or incorporated places where State Extension Services furnish services as reported in their affirmative action plans.

contacts, slightly more than 10 percent of Extension's potential clientele. This figure is down from 7.4 million in fiscal 1977 because of a decline in the effective level of program support. Racial or ethnic minorities comprise nearly 16 percent of CRD clientele. The groups not involved in CRD programs, in proportion to the percentage of potential CRD clients, are Orientals and Hispanics. Of the 6.5 million CRD clients of local programs, the following client categories were represented:

| | Percentage |
|---|---|
| Local government representatives (county, municipal, special districts) | 16 |
| State government agency representatives | 12 |
| Federal Agency representatives (regional or local level) | 9 |
| Local service clubs or locally organized development organizations (sometimes organized for a specific project) | 12 |
| Individuals (persons who are interested in programs and projects to improve their communities) | 51 |
| | 100 |

## IMPACTS AND CONSEQUENCES

What difference does Extension make when it is involved in community development efforts? What might be expected of Extension's effort in local communities where a significant amount of resources can be concentrated?*

*To address these questions, three major studies provide the basic data with other reports providing significant evidence of program impacts and their consequences. (See references 3,4,10) This analysis represents what might be expected of Extension efforts as well as variation in Extension CRD programing. It also can serve as evidence of the relationship between the stated purpose of CRD efforts and what CRD clientele perceive are the benefits of Extension programs.

Extension's CRD efforts can be viewed within the context of four program categories:

(1) *Community problem-solving capacity*--Enhancing the institutional, organizational, and leadership capacities of rural communities to involve citizens in development efforts; to define and meet their community objectives; and to coordinate public programs and private initiatives in meeting these needs.

(2) *Community facilities and services*--Providing professional, organizational, leadership, and management assistance for community leaders, citizen groups, local governing officials, and planning and development organizations in acquiring desired facilities and services.

(3) *Public policies and issues*--Assisting rural citizens and governing officials in their efforts to understand relevant public issues and influence formulation of public policies affecting them and their communities.

(4) *Family income*--Assisting leaders and rural citizens to recognize, pursue, and make available income-producing opportunities.

An analysis of 52 case studies 5/ showed that Extension CRD is characterized by both diversity and singular focus. The diversity was inherent in the variation among:

- Kinds of communities in which projects were found.
- Kinds of community problems on which projects were focused.
- Degree to which the various communities were meeting their aspirations.
- Relative effect of the Extension agents involved.
- Organization of community activities within projects.
- Degree of awareness of community participants of the community development process in which they were involved.

The diversity of activities under CRD is evidence of the "facilitating" role of CRD staff found in projects.

In the majority of case studies, it is clear that Extension is involved in assisting local officials and citizens to learn the skills of community problem solving. The commitment to the strengthening of the capacity of individuals to become effective citizens represents a major feature these projects had in common.

Another unique characteristic of Extension CRD activity is the sustained effort of Extension. The average length of projects studied was more than 5 1/2 years, with some projects lasting more than 10 years.

The premium placed on citizens taking control over their own lives also is a characteristic of CRD programs. Little evidence was found that these programs fostered a dependence on either Extension or government.

The predominant theme is of an effort designed to constantly increase the skills of community residents in determining the future directions of their communities.

Skills needed by community residents vary according to resources present in the community. In resource-rich communities, skills most often are developed in community expansion projects and long-range policy planning. In limited resource communities, skills are needed to establish new sources of income, to maintain or obtain community facilities or services, or to effect justice. In declining communities in which resources are draining away, the need is to increase communications, multiply skills, and effectively utilize external resources to help retain and expand resources that do exist in the community.

In most cases, the question has not been, "What can government do for us?", but rather, "How can private initiative be combined with public investment programs in a way that meets our needs while at the same time preserving important values?"

These observations led to a final characteristic of the projects studied. Many revolved around planning activities designed to gain access to State and national investment programs. CRD input ensured extensive citizen involvement in development of proposals to governmental bodies for housing and industrial development programs, for example.

Unlike their urban counterparts, without involvement of Extension, many of the communities, because of small size and/or low tax base, simply would have been unable to afford the necessary planning studies to appropriately use the programs of public investment. Extension programs typically involved surveys, other community assessment procedures, and provision of technical assistance to communities. These activities helped public investment programs work more effectively.

A study of 1,340 CRD program participants,6/ randomly selected from a national population, asked the participants, "In comparison to other tax-supported services in your county, are the services provided by Extension CRD workers worthy of the public or tax monies required to provide such services? With a mean score of 7.3 on a scale of 0-10, these participants rated CRD services very worthy.

Participants also indicated:

- Local people take an active part in planning CRD programs with Extension CRD staff members.
- Local people take an active part in carrying out CRD programs.
- Local people generally have a clear understanding of the mission of the Extension Service regarding CRD.

Case studies indicated that participants related primarily to critical incidents of short time periods of significant events during the course of a given project.7/

Participants' responses also provide indications that CRD programs are consistent with the needs of people in counties across the country. They see CRD programs meeting needs and associate other community agencies' involvement in these CRD programs as being considerable.

As to the extent other agencies' community development activities are being coordinated by Extension CRD efforts, participants see Extension active in this coordination role.

## DIFFERENCES MADE BY COMMUNITY DEVELOPMENT PROJECTS

Participants interviewed in the 52 case studies 8/ believed that:

- Projects were directed toward important community problems.
- Changes that occurred within the communities were beneficial.
- Extension workers were important.

Individuals and groups who benefited from the projects were diverse, ranging from farmers and producers to senior citizens. All but five projects could identify individuals or groups who had received social or economic benefits from project activities. The five projects which had no reported beneficiaries were not unique; the data concerning beneficiaries were simply insufficient.

The benefits resulted from communal action of local citizens. Extension was able to assist local citizens to act in an effective way. With the widespread reports of success, strong inferential evidence supports Extension's positive effect in the communities studied.

## POSITIVE CONSEQUENCES

To assess the outcomes and the community consequences for various community client groups, participants were asked to indicate who most likely would have been affected by or would share in positive community consequences resulting from Extension CRD efforts to help communities reach their goals.

Adverse or negative consequences sometimes result because of decisions and actions taken by communities. A similar question, therefore, was asked of participants to determine how client groups were likely to have been affected by or to have shared directly in any negative community consequences resulting from Extension CRD staff's efforts to help communities reach their goals.

To cross-check this question, State Extension CRD program leaders and Extension (local and area CRD agents) also were asked to respond to the same questions. 9/

Both sets of respondents thought that local governing officials were most likely to be affected by or to have shared in positive consequences. Handicapped persons and racial/ethnic minorities were considered to share the least in positive consequences. However, respondent groups indicated they would benefit to some extent.

All respondent groups did believe there were some, but few negative consequences experienced by clients. The most negatively affected groups identified were local governing officials and managers and owners of small businesses. The least negatively affected groups identified were youth, handicapped persons, racial/ethnic minorities, and small farmers. The rank order in which State leaders, field staff, and knowledgeables placed the various client groups was not very different. In fact, this variance was much less than the variance for positive consequences which indicates that all three respondent groups view beneficiaries similarly in terms of their reviewing both negative and positive benefits through CRD programs.

In an independent but related study 10/ of Extension programs that assist people to recognize and pursue economic opportunities, a number of impacts were found. CRD business and industrial development (BID) efforts were rated as being of much or great value in:

- Helping individuals recognize and pursue opportunities for improving income.
- Assisting firms and businesses.
- Assisting communities.
- Assisting community efforts to maintain businesses or pursue new economic opportunities.

During this 5-year period, these BID programs studied in 26 States resulted in:

- Establishment of 50 industrial parks.
- Creation of 56 development corporations.
- Creation of 45 industry recruiting organizations.
- Attraction of 243 new firms.
- Expansion of 366 firms.
- Investment of $4.77 million in plants and equipment.
- Creation of 20,233 new jobs.
- Development of $1 million in new payroll.
- Involvement of 45,470 program participants.

In the hospitality, recreation, and tourism (HRT) program, similar results were reported with participants rating those efforts highly in these terms:

- Helping people to recognize and pursue income opportunities.
- Helping people individually.

- Assisting the community as a whole.

- Being valuable to firms and businesses.

The HRT industry is composed of small, independent, and privately-owned recreation businesses from 2-3 bedroom cottages to 100-500 room motel-resort complexes. These programs focus on owners and operators as well as managers of the HRT industry or businesses. (The public sector of HRT was excluded from the study.)

The programs evaluated were aimed at improving management and development skills, role of HRT in community economic development, organizing industry associations, hospitality education, and understanding private-public sector relationships.

High rates of voluntary participation in HRT programs indicate a high level of value placed on Extension CRD programs. Of those who responded--owners/operators, managers/representatives of a business, or community representatives -- nearly two-fifths indicated these programs were of help in recognizing and pursuing income improving opportunities. Representatives of firms indicated that HRT programs had a positive and substantial effect on both their personal and firms' income. At least 23 percent of the respondents indicated more than 25 percent increase in income and at least 45 percent believed income was increased 10 percent or more.

## COMMUNITY ACCOMPLISHMENTS BY FOUR CRD PROGRAM CATEGORIES

Activities in CRD are grouped into four broad program categories. They are listed in order of importance in helping citizens and communities make decisions or take action, as determined from a survey of program participants.

1. Community facilities and services.

2. Community problem-solving capacity.

3. Public policies and issues.

4. Family incomes.

The BID and HRT program activities are examples of specific areas of service within these broader categories.

Field staff listed specific citizen and community accomplishments by program category as examples of activities receiving CRD assistance during an 18-month period.

1. *Improving Community Facilities and Services*

   --11,731 families and 1,935 firms were served by newly created community facilities or services, including recreation.

   --18 communities decided against expansion of water, sewer, and solid waste systems.

--611 communities decided in favor of expansion of water, sewer, and solid waste services.

--2,120 water systems and 935 sewer systems were developed or improved to meet standards.

--2,972 solid waste systems were developed or improved to meet standards.

--426 communities had an increase in the land acreage used for food and fiber production.

--3,750 communities had an increase in use of existing water, sewer, and solid waste services.

--2,768 communities had an increase in health delivery facilities and services.

--574 communities had an increase in public transportation facilities and services, including roads.

--629 community recreational facilities were constructed, expanded, or improved.

--815 recreational programs were initiated, expanded, or improved.

Hospitality/tourism programs developed during a 5-year period include:

--579 new campgrounds with improved facilities.

--5,500 new motel rooms.

--3,384 new campsites.

2. *Enhancing Community Problem-Solving Capacity*

--61,879 local citizens participated in leadership training activities.

--12,148 elected officials participated in leadership training activities.

--6,074 citizen action groups were formed or assisted.

--12,527 existing community action groups were helped to improve their operations.

--759 surveys regarding citizens' needs were conducted.

--379 government organizations were formed (water or sewer or other special purpose districts, planning groups, development organizations).

--379 local governments were assisted in developing master plans.

3. *Understanding Public Issues and Policy Formulation*

--4,852 local governing bodies changed practices, ordinances, or resolutions for finances, budgeting, or taxation.

--583 local governing bodies changed personnel management practices, ordinances, or resolutions.

--5,528 communities affected changes in land-use control measures.

The intentional effect of these programs, with which respondents agree, has been to strengthen community residents' awareness of and participation in dealing with public issues and policies that affect them. Unintentional effects have been to contribute to conflict among community groups "to some degree" and "tended to promote isolated, self-oriented communities to some degree."

4. *Opportunities for Producing Income*

--148 new businesses or industrial firms began operations in rural communities.

--324 people obtained new marketable job skills.

--83 communities had the rate of employment increased.

--228 communities had population increased.

--241 communities improved the quality of the living environment (reduction in water, soil, and air pollution and improvements in the quality of water and other services).

During a 5-year period:

--243 new firms located in rural communities.

--366 firms expanded.

--92,133 new jobs were created.

--165,000 travelers increased in rural communities.

--$31 million increased in lodging and restaurant sales in rural communities.

Respondents indicated substantial increases in number and degree of involvement with local citizens of community agencies (voluntary organizations, government agencies) that are doing development work in the community. This suggests some level of interaction by Extension with other agencies.

Interpreted as testimonial data, respondent answers infer positive consequences to Extension CRD programs. Participants perceived Extension CRD efforts as useful. Some quantitative data are generally available, but frequently are not collected in sufficient depth or are not available at the proper time, to permit comparison of how respondents felt (testimonial) with what "really" happened (measurable).

The benefits from community development projects are not always equally distributed. And in some instances, certain individuals and groups may be adversely affected as a result of changes made in local economies, public decisionmaking processes, and public facilities. Many of these impacts are unavoidable byproducts of efforts to improve overall community conditions. For example, successful projects to stimulate increased employment and total income in a community may raise local wage levels. While most members of the community benefit from such changes, a few, such as those farmers dependent on hired labor and some established industrial producers, may experience higher costs because of higher prices they have to pay for labor.

Community development projects also may lead to shifts in resources among communities. For example, development of new local businesses may partially displace goods and services previously supplied by firms located outside the community.

In about half of the 52 case study projects, some adverse effects were reported. About half of the persons, to whom negative consequences occurred, were persons or groups not involved in the project but residents in the community where the project took place. Examples reported included such things as displacement of a few business firms by new cooperatives and other activities, imposition of higher general taxes to finance new public facilities, or in some cases, higher taxes for members of the community who did not benefit from the facilities, and lack of opportunity or unwillingness to participate in community projects and decisionmaking processes by some disadvantaged persons or groups. These examples illustrate that the socio-economic adjustments required to solve major community problems are not easy.

## RELATIONSHIP TO OTHER INSTITUTIONS, AGENCIES, ORGANIZATIONS, AND THEIR PROGRAMS

Development is intrinsically interwoven into the total community process. As communities face the challenge of finding ways to deal with local development problems, a special thrust is being made to train rural leaders and to get more citizen participation in the process. These efforts help local communities resolve their development problems with their own leadership and their own resources. When outside resources such as Federal grant and loan programs are appropriate, local leaders should be better able to use them.

### CRD PROGRAM RELATIONSHIPS

All Extension CRD projects involve local, State, and Federal government agencies and local firms, industries, or development groups. Of 52 case studies in 29 States which were completed for the national CRD evaluation, there was an average of 27.3 major participants per project. The average number of participants included local governments, 2.5; State governments, 1.8; Federal government agencies, 1.3; and local service organizations and agencies, 1.8. Local private citizens made up the balance of participants.

Local and State government participation included municipal boards or councils, county commissions and boards, special purpose districts, planning agencies, local development agencies or organizations, regional planning and development divisions of government involved with grants and loans, or those assuring compliance with health, environmental, or other regulations.

Federal agencies involved included Farmers Home Administration, Soil Conservation Service (SCS) and other agencies of USDA, Department of Housing and Urban Development, Department of Commerce (Economic Development Administration and Coastal Zone Management), and regional commissions and agencies that provide technical assistance or make loans and grants to local governments.

## NOTES

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2. Ibid.

3. Charles L. Mulford, Gerald E. Klonglan, Richard D. Warren, and Ronald C. Powers, *Impacts of Extension's Community Resource Development Projects*, a study with State program leaders, Extension workers, and knowledgeable citizens. A cooperative project between Iowa State University's Cooperative Extension Service and the North Central Regional Center for Rural Development, 1980.

4. Lynn Davie and Associates, *Community Resource Development: A Description Based on the Analysis of 52 Case Studies Using the Shared Process Evaluation System.* Toronto, November 1979.

5. Ibid.

6. Mulford, et. al., op. cit.

7. Davie, op. cit.

8. Davie, op. cit.

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10. *An Impact Study of Selected Extension Programs that Assist People to Recognize and Pursue Economic Opportunities.* Cooperative Extension Service, Mississippi State University, January 1980.

# VII.
# Summary of Economic and Social Consequences of Extension Programs

## VII. SUMMARY OF ECONOMIC AND SOCIAL CONSEQUENCES OF EXTENSION PROGRAMS

### AGRICULTURE AND NATURAL RESOURCE PROGRAMS

Agriculture and natural resource programs encompass a broad range of subjects related to agricultural production and management, agribusiness firms, marketing, and natural resource use. The clientele includes diverse groups ranging from larger commercial farmers and agribusiness firms to small, part-time farmers, low-income urban gardeners, owners of small woodlands, and other citizens interested in agriculture and natural resources.

Overall, the largest single emphasis in this program area has been on agricultural production and management of the farm business. For this reason, the evaluation focused largely on the national economic and social consequences associated with Extension's work in agricultural production and management. This included major studies of State-level data across the nation to sort out relationships among agricultural Extension, research, and growth in agricultural productivity and to measure relationships between Extension and changes in farm income and distribution of income among farmers.

The aggregate consequences of agriculture and natural resource programs reported in this study, therefore, are primarily related to Extension's farm production and management work and, to a lesser extent, its marketing work. The analysis did not provide a separate evaluation of the impacts of Extension assistance in the areas of processing and distribution of agricultural products, nor did it assess the adverse environmental or social impacts and the related economic costs of the accelerated shift to new technology.

Studies of impacts of Extension on the agricultural economy are based primarily on data from the period of the early 1960's to the mid-1970's.

Major findings of the evaluation indicate that the agricultural Extension program has contributed significantly to the rate of growth in productivity and efficiency of U. S. agriculture. Most of this contribution has been because of Extension's ability to increase the rate of adoption of new technology and knowledge generated by agricultural research.

Measures of the returns to public investments in Extension's agricultural program were calculated in terms of the value of additional farm output estimated to result from marginal increases in Extension funding. One estimate based on 1948-1971 data indicated that an additional $1,000 invested in Extension agricultural programs and related activities may yield returns of roughly $1,080 in the first following year, $540 in the second year, $270 in the third, and so on. The analysis also indicated the returns to Extension were highly dependent on the level of investment in agricultural research.

The contribution of Extension to the process of technological change and economic adjustment in agricultural production has added to the capacity of U. S. agriculture to meet growing demands for exports and to reduce or moderate the rate of increase in consumer food and fiber prices.

A recent analysis indicated that if public expenditure on agricultural research and Extension in the United States was reduced by 10 percent over the years 1980 to 2000, the growth rate in agricultural productivity would decline and consumer food prices would be higher. Over the 20-year period, U. S. consumers would pay $14.4 billion more for food compared to a savings of $3.6 billion in reduced government expenditures for agricultural research and Extension.

Basic changes in technology and economic conditions affecting agriculture also have led to reduction in the number of farms, to larger farm sizes, and to increased concentration of farm income.

By accelerating the rate of adoption of new technology, Extension probably has reinforced these effects. Conversely, by making technology and new knowledge more available to a large number of producers, Extension has enabled a large number of producers to remain in production longer than may have been the case in the absence of a publicly supported Extension Service.

On balance, it seems that while it has had some moderating effects, agricultural Extension has not greatly altered, and in some respects may have reinforced, the basic trends toward fewer and larger farms and the varied economic and social consequences associated with that adjustment process.

Case examples provided only limited information on some of the consequences of natural resources Extension which have long been a small part of the program area. Substantially increased efforts in Extension work in environment, health, and safety have been made during the 1970's. These efforts include some specially-funded educational programs such as farm safety and pesticide applicator training to complement action and regulatory programs of other agencies of the government.

The growing involvement of Federal, State, and local government in agricultural production and natural resource management has generated new and increased demands from farmers and other clients for assistance in understanding and adjusting to public policies, programs, and regulations. Additional demands in regions with rapidly growing urban and nonfarm populations have led to increased Extension programs in home gardening and related areas. County agents estimate that nearly 6 percent of the adult population in a sample of cities of 300,000 or larger was reached with agriculture and natural resources information (excluding mass media) in 1978.

Extension's role has been changing with the growth in private sector information and assistance to increasingly sophisticated commercial farmers. It is more a wholesaler of agricultural and technological information than in earlier periods. And it also serves a secondary role as an objective reference for some producers who desire to evaluate information received from private sector sources. Recent surveys indicate, however, that Extension remains a leading direct source of agricultural production information to commercial family farmers.

Estimates of the composition of the program's clientele indicate that the agriculture and natural resources program is reaching large proportions of the farm population. About two-thirds of the agricultural producers had direct contact with the program in 1978 (excluding information relayed through the mass media), according to estimates provided by county agents from a nationwide random sample of 562 counties. A somewhat larger percentage of the operators of medium and large-sized farms had contact with the program than did the operators of very small farms.

In recent years, a conscious, distinct effort has been made to implement special programs to reach and serve the small, limited resource farm operators. Thirty-one States now have programs designed specifically to serve this audience.

This brings into focus an essential trade-off between conflicting objectives. The greatest impact on aggregate agricultural productivity is obtained by targeting Extension programs to the large producers who account for the bulk of food and fiber production. A concentrated effort on services to disadvantaged farm people, on the other hand, meets various social goals but reduces the positive impacts on aggregate productivity. Currently the program manifests neither extreme.

Increasing gaps between the technological and educational needs of large commercial farmers and small, limited resource farm operators require different program delivery methods and staffing.

Extension activity reports reveal a growing demand for information on home gardening and related subjects for nonfarm and urban citizens. The growing pressures of natural resource utilization problems and the increasingly important role of the off-farm sector of the agricultural system also constitute potential for broadening and changing the relative composition of the clientele served.

One of the key underlying issues for the future will be the relative priority given to serving and responding to the various diverse audiences for Extension agriculture and natural resource programs.

## HOME ECONOMICS AND NUTRITION PROGRAMS

Home economics and nutrition programs address all phases of family living. Clientele is diverse as are methods for extending information to individuals and families in rural and urban areas. Delivery methods include mass media, volunteers, and trained paraprofessional aides. Subject matter is designed to assist individuals and families to:

- Improve food and nutrition knowledge and practices.
- Acquire and maintain housing, furnishings, and equipment, and use energy efficiently.
- Improve consumer competence and behavior.

. Achieve effective human development.

. Select, use, and care for clothing and textiles.

. Improve health and safety practices.

A recent national Gallup Poll* determined that 17 million of today's adult population, about 10 percent, have participated actively in some aspect of Extension home economics and nutrition programs. An annual participation estimate, however, was not obtained because the survey did not specify a time period for the respondent's answer. Home economists separately estimate an average number of participants at 4 million each year.

Rural and urban families from all socioeconomic groups were represented among the survey participants. People in low density communities participated more than those in high density communities. The lowest rate of adult participation (7 percent) was for cities of more than 1 million. People with moderate to high incomes and professional status participated more than low income and manual workers. Whites participated at almost double the rate of nonwhites.

Fifty-one percent of the respondents, including the 10 percent who actively participated in a program, reported receiving Extension information. Among those 51 percent, the principal sources of Extension information were newspapers, television, radio, publications, and newsletters. The frequency of use of these sources ranged from 18 to 29 percent of the respondents receiving Extension information. Telephone contacts were reported by 9 percent, home visits by 3 percent, and special interest meetings by 12 percent. One-third of the recipients did not recall the mode of delivery.

Among respondents receiving Extension information, 30 percent said food preservation and food preparation were the most frequent subjects received. Nutrition information and energy conservation information were both reported by 22 percent of those respondents, and about 10 percent reported the subjects received were crafts and recreation or money management and consumer affairs. Half of the respondents who reported receiving home economics and nutrition information could not recall the specific subject matter.

The 51 percent of respondents who reported receiving Extension materials or other assistance equates to about 85 million adults. Results of the survey indicated that about 19 million of this number deemed the information received "very useful" and 14 million "fairly useful."

State narrative reports and various special studies provide abundant information on participation practice and knowledge change, satisfaction of clients in many subject areas, and estimates sometimes of benefits received. But these sources

*Conducted as part of this evaluation to assess program consequences.

cannot be used to produce reliable aggregate estimates of benefits from a national viewpoint. This is because of differences in methods and measures used to estimate the benefits and the difficulty of separating benefits due solely to Extension assistance from those due to other sources of assistance.

They do indicate, however, that some programs are more useful to clients than others. Reported estimates of benefits from home gardening and food preservation activities ranged from $150 to $600 savings per program participant. For home repair, clothing construction, refinishing or upholstery, and sewing machine maintenance, estimates ranged from $10 to $50 per participant.

The need and capability of Extension to establish an effective food and nutrition education program for low-income families was established in the mid-1960's. The Expanded Food and Nutrition Education Program was initiated in 1969 and has continued.

Participation in the Expanded Food and Nutrition Education Programs, since the start of the program, has been 1.7 million households representing more than 6 million family members. Almost three-fourths had family incomes of less than $5,000, 58 percent lived in urban areas, and 60 percent represented minorities.

Analysis of food servings recorded by homemakers indicated that 21 percent of those remaining in the program for 24 months were serving adequate diets, compared with 4 percent of all entrants at the time of entry. An adequate diet was defined as a specified number of servings in each of four food groups: milk, meat, vegetables and fruits, and breads and cereals.

Home economics and nutrition workers at the State level cooperate with more than 250 different agencies including all major Federal government departments, many State agencies, and various private organizations. The cooperation may be intensive and widespread as in certain nutrition, energy, and health programs. Or it may involve only clientele referrals and sharing of selected materials, audiences, facilities, or one-time programs.

Specialists in home economics and nutrition Extension programs believe the available research is useful but incomplete, especially for nontraditional subject matter areas. They believe more research in the behavioral science areas and more interaction with researchers would improve program effectiveness.

## 4-H YOUTH PROGRAMS

The most visible consequence of 4-H is participation itself. More than 4 million youth participated in one or more ways in 4-H activities in 1976. Also, more than one-half million parents and adult volunteers assisted with those youth activities.

It is unlikely that any substitute involvement in youth organizations would have been available for most of the youth participants and volunteers who live in rural areas.

Beyond participation, 4-H consequences were classified into categories:

*First Order*--effects impacting individuals and small groups immediately.

--Knowledge gains.

--Perceptual skills and capacities.

--Cognitive skills and capacities.

--Motor/muscular skills and capacities.

*Second Order*--deferred impacts on individuals and small groups following first order impacts.

--Inner-directed or prudential attitudes of individuals/small groups.

--Social attitudes and values of individuals/small groups.

--Social behavior of individuals/small groups.

--Wealth/health/environmental quality of individuals/small groups.

*Third Order*--effects impacting on community or regional groups.

--Social standards of large groups/institutions.

--Social behavior.

--Wealth/health/environmental quality of large groups/institutions.

The elements in each category indicate the nature of the possible consequences. Knowledge, skills, and capacities are acquired or not acquired. Attitudes and values may be changed, developed, reinforced, or not affected at all. Behavior may be learned and/or exhibited.

The consequences of the first order are considered to be well substantiated and reliable. They are demonstrated in 52 of the 91 4-H studies appraised by two independent contractors. The most common first order consequence is knowledge gain, reported in 41 of the 52 studies.

Consequences of the second and third order are not well substantiated; however, 35 of the 91 studies demonstrated second order consequences; 11 demonstrated third order impacts.*

*Subtotals add to more than 91 because a few studies included more than one consequence category.

In generating first order consequences, it appears that 4-H is a primary cause in some cases and instrumental in others, Evidence of 4-H impacts on second and third order of consequences is less certain, Perhaps the most important impact of 4-H in the third order of consequences is the maintenance role it seems to play in rural communities. Its direct role in agricultural productivity has become relatively insignificant; however, attitudes and skills learned in 4-H have been carried into adulthood and used by farmers.

The 4-H program uses 10 delivery groups and/or modes:

- Community clubs
- Project clubs
- School clubs
- Special interest groups
- School enrichment
- Instructional TV
- Camps (special purpose)
- Camps (summer)
- Camps (day)
- Individual study

The evidence indicates that the community club is, perhaps, the most effective in achieving 4-H program objectives. It combines a powerful set of factors: project orientation, long duration activity, self-evident practical payoff, cross-age tutorship, multiple adult leaders/instructors, adults with strong current practical experiences, individual project responsibilities, public recognition as an award, and strong family involvement and support.

Other delivery modes such as day camps and instructional TV are not as productive but they are appropriate methods where other delivery modes would not be as efficient, as in the case of a simple transfer of knowledge.

In a more general vein, 4-H tends to serve those needs that might be termed the "normal, developmental needs" of youth and to help them avoid channeling their energies into "abnormal directions or pathological behaviors." Because of the strong role of local people in the program, their values tend to dominate the program content and direction.

The distribution of impacts is related to residence of participants and 4-H graduates and other characteristics such as income class, age, educational expectation, and racial group. In 1976, 77 percent of 4-H participants lived in nonmetropolitan areas; the distribution of graduates was similar.

Almost 90 percent of the families of 4-H participants have incomes of more than $10,000 and 40 percent have incomes of more than $20,000. Participation is about equally divided between boys and girls; 86 percent are from 9 to 15 years of age and the rest are from 16 to 18 years of age. Nonwhite participation averages 21 percent, but there are wide differences across geographic areas and by program delivery systems. The average length of participation appears to be about four years.

The program content is heavily influenced by local volunteers and families supporting the 4-H and local advisory committees. County agents are legally responsible for the conduct of 4-H programs, but in practice, the agent cannot direct citizens or volunteers whose participation is needed. Among 16 different Extension county agents' functional activities, recruiting and training volunteers was identified by 4-H agents as their most time consuming and critical activity.

The primary administrative support for 4-H lies with the cooperating, university-based State Extension Service which generally oversees curricula, organizational rules, and practices; hires and supervises professional staff; and tends to set bounds on program content and relative program emphasis.

State 4-H staffs are seldom stationed in university academic departments. Their linkage to researchers usually is through agriculture or home economics specialists. State staffs generally prepare program materials, train 4-H staff, and oversee 4-H events and planning.

The Federal staff communicates Federal interests and priorities to State units, helps to coordinate multi-State activities, and assesses and communicates new program ideas.

The large role of Federal, State, and county activities is financial, technical, and organizational support for 4-H. Private sources provide about one-third of the financial support for 4-H, with those funds being used to support programs through awards, trips, camping, and other special incentives. In addition, the value of lay volunteer services is estimated to be almost four times the amount of Federal, State, and county funds for 4-H.

As an operating program, 4-H is guided both in terms of added resources contributed and local program management by private sector participation and support.

## COMMUNITY AND RURAL DEVELOPMENT PROGRAMS

The community and rural development program area is the smallest of the four major Extension program areas. The program presently serves about 10 percent of the more than 60 million people in rural areas. It is intended to help local citizens and their communities reach group decisions and take group actions on local projects that will improve community facilities and services, family incomes, community problem-solving capacity, and responses to public policies and issues. The groups and individuals actually involved in local projects include:

| Participants | Percentage |
|---|---|
| Federal agency staff at local or regional locations | 9 |
| State government representatives | 12 |
| Local service club and development organizational representatives | 12 |
| Local government representatives | 16 |
| Other private citizens | 51 |
| Total | 100 |

Case studies of 52 local Extension community and rural development projects in 29 States and additional surveys of program clients provided the primary information for identifying the program's clients and activities. About one-half of the local rural community development projects reviewed in this evaluation were initiated by Extension staff and the remainder by local citizens' groups or local governments.

Approximately one-third of the 52 projects were designed specifically to serve geographically, socially, or economically isolated citizens. A larger percentage of such projects for special audiences were initiated by Extension than was the case for other projects.

Although the data do not show the extent to which community and rural development efforts have addressed the needs of disadvantaged citizens, they do suggest that Extension has taken a more aggressive role with these audiences than have local citizens or governments.

The program clients surveyed ranked the four program subareas according to importance of Extension assistance in helping local citizens and communities make decisions or take actions as follows:

1. Community facilities and services.
2. Community problem-solving capacity.
3. Public policies and issues.
4. Family incomes.

Examples of local projects assisted by Extension over a recent 18-month period include:

--Leadership training for 61,879 citizens and 12,198 elected officials.

--Formation of 379 government organizations such as water district and planning groups.

--Development or improvement of 2,972 solid waste systems.

--Change in financial and budgeting practices, ordinances, or resolutions by 2,722 local governing bodies.

--Initiation of 148 new businesses in rural communities.

Most of these endeavors involve actions and interactions of government agencies, private businesses, and local citizens. Extension's typical role has been that of catalyst, convener, and coordinator; so it is not easy to measure the approximate share of the credit attributable to Extension efforts.

Adverse impacts on limited numbers of people were found in about half of the projects studied in this evaluation. Most of these impacts reflected the redistribution of benefits among community groups from efforts perceived to improve conditions for the "community as a whole."

# VIII.

# Suggestions for Continuing Program Evaluation

## VIII. SUGGESTIONS FOR CONTINUING PROGRAM EVALUATION

This section acknowledges the need to strengthen Extension's approach to evaluation of its programs, and Extension's commitments to do so. It suggests a national plan for evaluating impacts of Extension.

A major outcome of the national evaluation of social and economic consequences of Cooperative Extension Service programs is increased sensitivity among Extension leadership and professional staff about the importance of evaluating program impacts. The current comprehensive look at program impacts from a national approach has raised an understanding within Extension about the limited systematic impact information that is available and the need to evaluate more completely and effectively the impacts of all Extension programs.

Extension's commitment to evaluation has been reinforced by a March 1979 resolution of the Extension Committee on Organization and Policy. The thrust of this resolution is to:

> continue the serious commitment of USDA and the State Cooperative Extension Services toward evaluating the consequences of Extension educational programs and the effectiveness of Extension as a system for providing educational opportunities to citizens, and to further facilitate the cooperation of USDA and the State Cooperative Extension Services in this endeavor.

It is recognized, however, that the economic and social consequences of Extension programs are often difficult to assess for several reasons. Among these are the difficulties in separating the impacts of Extension programs from those of other factors influencing client decisions and actions, and the diversity of Extension programs among States and counties which impedes consistent application of usable, national measures of economic and social impacts.

### SYSTEM OF STUDIES OF EXTENSION PROGRAM IMPACTS

An ongoing system of studies of Extension program impacts is recommended for national Extension program evaluation and accountability. This system would relate impacts of local, State, and national Extension programs to a national evaluation framework and strategy.

Cooperative Extension differs from the more typical line agency which receives specific Federal program direction. The cooperative, rather than the line relationship among local, State, and Federal partners of Extension, suggests the merits of a two-tier approach to Extension's impact evaluations.

TIER 1:
STUDIES OF STATE AND LOCAL EXTENSION PROGRAM IMPACTS

Tier 1 would rely upon State studies of the impacts of local and State Extension programs. This tier would increase the quality and the national utility of such studies.1/

Through tier 1, State Extension Services could consider specifically expressed national interests, together with State and local evaluation needs, as factors in selection of programs for examination of impacts. States would be encouraged to share methodologies for studying impacts of programs with high priority for national evaluation. Such sharing would encourage the use of comparable study methodologies in different States to facilitate comparison and synthesis of impact findings on similar programs.

Science and Education Administration (SEA)-Extension and State Extension Services would cooperatively prepare inventories of current and completed studies of State and local Extension programs and appraise, summarize, and synthesize impact findings from such studies.2/

Tier 1 would help fill national needs for program impact information through encouragement, guidance, comparison, summarization, and synthesis of studies targeted primarily to meet State and local needs. The flexibility of tier 1 would accommodate State variations in program emphasis, delivery, clientele, and evaluative questions posed.

TIER 2:
NATIONAL STUDIES OF EXTENSION PROGRAM IMPACTS

Tier 2 would encourage national studies through cooperation of State Extension Services to answer questions about the national impacts of identified Extension programs. Tier 2 studies would use agreed-upon measures of program impact in nationally or regionally representative sampling to aggregate impact findings across counties and States.

National or regional studies would be planned and conducted cooperatively by staff from State Extension Services, outside consultants, and contractors, as necessary.3/ The role of SEA-Extension in these impact studies would include coordination, support of procedures to strengthen objectivity, major funding, and liaison to Federal users outside SEA-Extension, because these studies would be designed primarily to serve information needs at the national level.

Tier 2 would help fill national needs for program impact information through national studies of program impacts. Such studies also might serve impact informational needs of participating States and help stimulate and support evaluation efforts within these States.

The SEA Evaluation and Impact Staff is responsible for conducting national evaluations of Extension programs that are mandated by Congress or the Federal executive. This staff also is responsible for national evaluations that involve combinations of Extension, research, and higher education. Such evaluations are to

be carried out in cooperation with SEA-Extension staff and State Extension Services. Special attention should be given to provide for liaison between the Extension evaluation system and the SEA Evaluation and Impact Staff.

## A NATIONAL EXTENSION IMPACT EVALUATION SYSTEM

A national Extension evaluation group comprised of representatives of State Extension Services and SEA-Extension should be charged with structuring and coordinating the operation of both tiers to maximize their usefulness as an evaluation system. The national evaluation group would be responsible for:

(1) Identifying national needs for information on Extension program impacts in the context of other factors such as research, higher education, and related private and public agencies.

(2) Recommending priorities to States and SEA-Extension for focus, scope, and type of evaluative studies to be carried out in a particular time period.

(3) Inventorying current studies of national, State, and local programs defined as relevant to national needs for impact information.

(4) Monitoring and identifying gaps and limitations in progress toward national evaluation and accountability.

(5) Summarizing, comparing, and synthesizing impact findings of completed studies of national, State, and local Extension programs.

(6) Increasing effectiveness and efficiency in satisfying national evaluation and accountability requirements.

Specific procedures should be adopted for appraisal of the Extension system of impact studies. At periodic intervals, there should be an external, indepth review of the system's costs as well as its planned and actual performance. Representatives of national audiences for evaluation reports should rate the reports for objectivity, relevance and timeliness, validity, representativeness, and usefulness in decisionmaking.

NOTES

1. Kappa Systems, Inc., *Extension Program Impact Findings from Selected Studies, 1961-1978*, Volume II; *Guidelines for Improving Extension Program Impact Studies*, Volume III: Arlington, Virginia, 1979.

2. Claude F. Bennett, *Overview of Contractual Work to Review, Appraise, and Summarize Studies of Extension Program Effectiveness, 1961-1978, with Implications for Future Extension Program Evaluations and Accountability*. Science and Education Administration-Extension, USDA, 1980.

3. Task Force for the National Evaluation of Extension Home Economics, *Proposed Structure for National Evaluation of Extension Home Economics Programs*. Science and Education Administration-Extension, USDA, 1979.

# Epilogue:
# Issues Highlighted by the Evaluation

# EPILOGUE:
# ISSUES HIGHLIGHTED BY THE EVALUATION

This section is a review of issues highlighted during the evaluation study as they related to questions concerning institutional support, role, programs, objectives, clients, and other aspects of the Cooperative Extension Service.

## POLICY DIRECTION AND FUNDING

The typical government agency is perceived as a single, coordinated homogeneous organization. By this definition, Extension is not typical. It is a decentralized, complex organization receiving policy direction and major financial support from three levels of government--Federal, State, and county (see figure 1). In addition, the private sector contributes volunteer services and funds along with advice on program direction and clientele, thereby influencing policy direction.

This complexity is compounded by the fact that there are 54 State and territorial Extension Services separately responsible to State and territorial governments, and more than 3,000 county units that have responsibilities to local governments as well as to their State Extension Services. Because the State Extension Services also are linked administratively to the land-grant universities, these universities directly influence the State Extension organization, and indirectly its programs and clientele.

Because it is subjected to many sources of policy influence and funding, the Cooperative Extension system clearly does not lend itself to strong central management and direction. The management of the Cooperative Extension system is much more accurately labeled as "coordination." It is provided at the State level by directors and program leaders of the State Extension Services and at the national level by the Extension Committee on Organization and Policy, made up of State Extension directors and the U. S. Department of Agriculture's Extension unit.

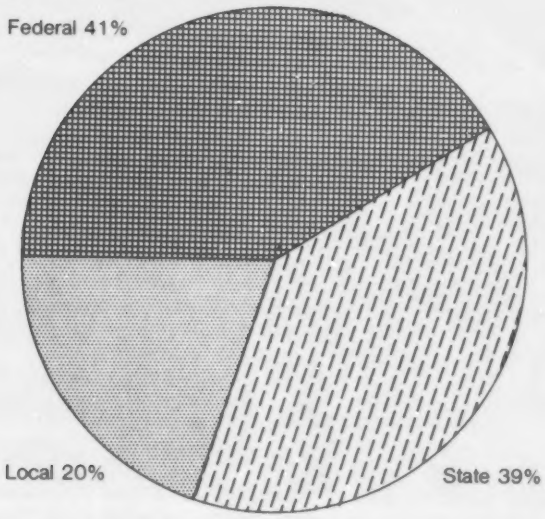
The outcome of this coordination in terms of program objectives and clientele varies from State to State and from county to county. The broad program areas are similar--agriculture and natural resources, home economics and nutrition, 4-H, and community and rural development. But their content varies according to State and local interests, needs, wants, and findings.

## FEDERAL, STATE, LOCAL INFLUENCE

The Federal role in the Cooperative Extension Service is strongest when policy direction is written into the law and funding is earmarked for specific programs. This is demonstrated most effectively by the Expanded Food and Nutrition Education Program. Other targeted programs include those for integrated pest management, small farm operators, farm safety, and urban 4-H.

Figure 1.

**Extension Funding, by Source, Fiscal Year 1978**




Federal formula funding with a matching requirement is most effective as a form of institutional support. With existing legislation, memoranda of agreement with States, operating procedures, and limited role of Federal staff, the Federal partner exercises less policy and program influence. This is desirable when the objective is primarily institutional support as opposed to support for specific programs and specific clientele.

Federal staff influence is limited. Federal staff members provide a linkage between the State Extension Services and other Federal programs inside and outside the USDA. They also help guide the development of new State programs in response to national needs and accelerate the adoption of successful individual State programs by other States. Special Federal funds sometimes are used to initiate and support planning and evaluation of new pilot programs.

The Federal role appears to be more influential for the agriculture program area than for other program areas. This is partly because of historical emphasis on agricultural concerns and partly because of corresponding dominance of agriculture in the overall responsibilities of the Department of Agriculture and the land-grant universities.

The ability of State managers to influence county programs is similar to, but stronger than, the ability of Federal personnel to influence State programs. This

varies somewhat among States and counties according to philosophy and administrative style of individual Extension directors, county leaders, and State universities. State specialists are influential because they are knowledgeable about the latest research and generally find answers to problems posed by Extension clientele.

Much of the strong county influence on program content and clientele assistance is because of the close contact that county Extension agents have with clientele in delivering packaged programs and responding to specific requests for information and assistance. County agents, in turn, also are influenced by numerous local advisory groups that are established in most counties and work closely with agents in planning annual programs.

County governments responsible for funding the county Extension Service have an indirect influence on program content through their role in hiring, program objectives, and policy direction. When county governing bodies have a strong interest and concern, their impact also is strong on program direction and clients served. Where there is a minimum of county support, the county agents are less influenced by county government. When local advisory groups are weak, the county agent has more autonomy.

## EXTENSION ROLES AND OBJECTIVES

The original Smith-Lever legislation has been amended several times, but it has adhered closely to the original language and the concept that defined a role for the organization more clearly than it defined program objectives (for example, "to aid in diffusing," "consist of giving the instruction"). Most of the legislative changes have served to broaden the program area of "agriculture and home economics and subjects relating thereto," to emphasize specific responsibilities such as marketing, transportation and distribution of agricultural products, rural development, small farms, and human nutrition.

The legislation defined both function and subject matter and in that sense focused on building an institutional capability and role in areas that were predominantly agricultural and rural. That institutional role now is more broadly defined and encompasses urban as well as rural clientele.

Under the legislative authorities and memoranda of understanding with the Department of Agriculture, the definition of specific program objectives and targeted clientele has been almost entirely delegated to State and county Extension units (and the private sector interest groups who influence them). Even though States must have plans of work approved by the Department of Agriculture, in reality, the review process has not been used to influence State and county programs' directions significantly.

The system's strong institutional presence in local areas and linkages with many (but not all) local citizen interest groups makes it both reactive and proactive to those citizens and their problems, needs, and desires. It also creates a dependency upon local citizen acceptance for continuing support of that institutional presence.

Despite the strong local orientation of program development, the system does respond effectively and often rapidly to certain problems, needs, and objectives

of national scope. Such responses are strongest when Extension expertise is a key element in problem amelioration, and there is a national convergence of State, local, and individual interests.

An excellent current example of convergence of these interests is the system's response to the energy problem. Need for energy conservation is a national problem that affects almost all individuals' interests. This has created strong local demands for information and acceptance of Extension education programs on energy conservation. The effectiveness in this area is unusual because of the wide range of clients Extension responds to through all four program areas.

Another example of convergence and relevance of Extension expertise is the system's response to the need for educational assistance when natural disasters such as storms, floods, or droughts strike. Widespread pest and disease outbreaks, such as the 1970 corn blight emergency, provide other agricultural examples.

Nevertheless, many perceived national problems are not or may not be readily and uniformly addressed through the normal functioning of the decentralized Cooperative Extension Service. These include problems of client groups unable to communicate their needs or have them heard at local and State levels, serious social and environmental problems for which individual incentives to seek and apply assistance are weak, and testing of new or innovative programs with high risks of failure in relation to potential local benefits or social acceptance.

## FORMULA VS. SPECIAL FUNDING

One of the major issues concerning Extension programs relates to appropriateness and effectiveness of alternative approaches to Federal funding for the Cooperative Extension system.

In recent years, increased earmarked Federal funding has been used to ensure that State and local Extension programs direct their attention to certain perceived national problems.

There are mixed views at the State and county level about desirability of earmarked Federal funding of Extension education programs to meet national objectives. While it increases the overall impact of the Cooperative Extension Service on national priorities, it also is often regarded as soft funding that can be suddenly withdrawn. Also, because Extension education is university-based and sees itself as working in the context of traditional academic freedom, direct funding often is viewed as a threat to that freedom.

Earmarked funding tends to minimize grassroots participation in the establishment of "locally agreed upon" objectives and to shift the balance of program between local needs and interests and national purposes. These influences often are seen as jeopardizing or conflicting with State and local support of established clientele. State and local Extension administrators obviously prefer the stability, simplicity, and flexibility of unearmarked formula funding.

At times Federal earmarking of funds and legislative direction for specific national objectives or clientele are viewed by State and local administrators as an aid in bringing about desired shifts in State and local programs when they are difficult to initiate at those levels.

The debate on the distribution of Federal funding ranges from exclusive reliance on institutional support, to selective institutional support (as in the case of 1890 or other universities), to major reliance on programmatic funding in support of specific national or regional objectives and target clientele.

It is possible that the real issue is obscured by the question of formula versus earmarked Federal funding. There are those at the Federal level who do not object to Federal formula funding as such. Rather, they object to what they see as a tendency in the State Extension Service to view formula funding as somewhat sacred.

Another important issue has to do with the relevance of the formula itself. These funds are allocated to States on the basis of their farm and rural populations. The formula is a comfortable fit for most agricultural and rural Extension programs. But it often is a far less appropriate basis for allocating funds for programs such as nutrition, urban gardening, or those related to water quality.

The nature of the sensitive relationships and balances involved calls for careful assessment of the strengths and weaknesses of both Federal formula funding and earmarked funding.

## BROADENING CLIENTELE BASE AND DIVERSIFICATION OF SUBJECT MATTER DEMAND

A phenomenon found in all program areas is the rapid broadening of clientele and the increasing diversification of information and educational assistance demanded by these clientele.

There are several reasons for this expansion. One is the constantly growing need for Extension assistance on the part of new as well as traditional clientele. Many new groups, including Federal departments and agencies, look to Extension for assistance. Another reason is the tradition of not restricting Extension to commercial agriculture. Civil rights rules and regulations, especially concerning affirmative action, also have done much to broaden Extension's clientele.

In the agricultural area, these changes include an increased emphasis on the educational assistance needs of limited resource and minority farmers and the growing demand for information from the more urbanized sectors of society concerning gardening, lawn care, and ornamental horticulture.

Agricultural county agents estimate that in 1978 nearly 12 percent of the adult population in cities of 10,000 to 49,999 and 6 percent in cities of more than 300,000 received information or educational assistance from agricultural Extension agents. Within the traditional agricultural area, new demands have grown for information and education on environmental, health, and safety considerations and for marketing assistance.

Subject matter diversification and clientele expansion probably have grown even more in home economics, nutrition, and 4-H areas. The changing age structure of the population, new lifestyles, urbanization for formerly rural areas, increased services to low-income and minority families, greater emphasis on youth, and rapidly expanding interests and concerns in food and nutrition have all contributed to a broadening of the clientele base and the traditional subject matter covered by home economists.

Home economists estimate that they provide educational services to about 4 million people annually, and when multiple services to the same individual are counted, the total service contacts are about 25 million.

Two reasons the 4-H youth program has been expanding into urban areas is in response to Federal legislative direction and to demands from 4-H graduates who have moved to town and want 4-H programs for their children. The number of urban youth participating in all 4-H programs has grown from .7 million in 1969 to about 2.7 million in 1976. Urban youth participation in 4-H clubs and special interest groups increased from .5 million to 1.6 million. Subject matter diversification is stimulated by these demands as well as growing limitations in the agricultural sector for farming careers for farm youth.

Rural and community development has been emphasized in recent years as a result of Federal policy direction and a growing awareness of the expanding capability of Extension staff to facilitate actions that address community welfare. Urbanization of many rural areas may be setting future limits to demand for services for rural or agricultural purposes, but urbanization, in turn, is creating new information demands upon the system.

The traditional Extension clients have been concerned that this broadening of the clientele base would bring a dilution of services to them. The Cooperative Extension Service has been reluctant to reduce traditional services, fearing that a loss of support from the traditional clientele would follow such a change.

Use of Extension funds by program areas for fiscal 1978 is shown in figure 2.

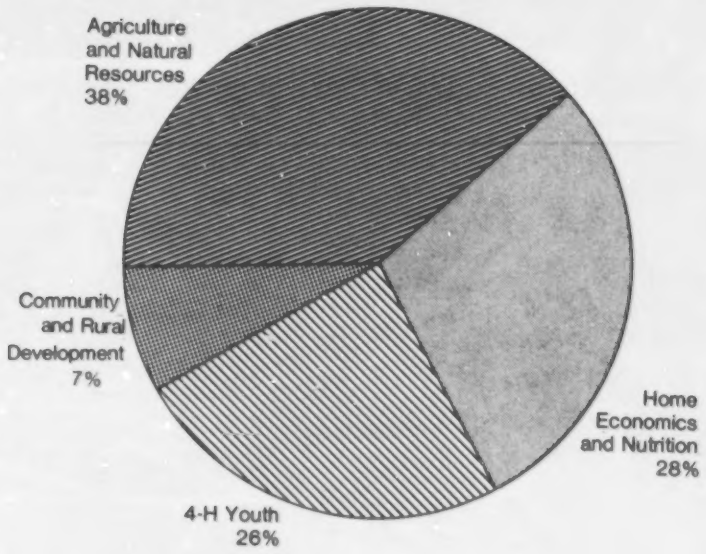
The Extension system has demonstrated enough elasticity to extend itself both vertically in range and detail of subject matter responsibility and horizontally in terms of its clientele base. Much of this has been done by wholesaling educational material through mass media and other diffusion channels. Some has been accomplished through employment of paraprofessional aides.

The wholesaling approach generally is seen as lowering the quality of the individual learning experience in the initial exposure, but often leading to demand for followup assistance including the need for one-to-one contacts. Limited staff and financial resources have contributed to the shift toward wholesaling.

On the other hand, the growing levels of family income and educational achievement among many clients have improved their means and other capabilities to use mass media contacts effectively. The greatly increased availability of other sources of the same, similar, or related assistance elsewhere in the public or private sector, with or without charges, also helps many clients respond to Extension information provided through the mass media.

Figure 2.

**Use of Extension Funds, by Program Areas, Fiscal Year 1978**




Low income and less educated clients benefit less from mass media approaches so other methods must be used to serve these groups. Paraprofessionals improve the effectiveness of one-to-one and small group contacts with the less advantaged and the less affluent clientele with whom they usually work. Because the paraprofessionals usually are recruited from the clientele they serve, they are able to relate better to their audience. Also, because paraprofessional salaries are less than professional salaries, more total assistance can be provided to serve such groups from a given set of resources.

In each of the major program areas, the largest proportion of clientele fall into the moderate or higher income and educational achievement levels, although the number of clients reported in lower levels of income and education seems to be increasing. This appears to be partly because of continuing traditional relationships with established clientele, improvements in income and educational levels within client groups, and fewer limitations and constraints in client capability to access and use of Extension education materials.

Even in the agricultural sector, when clients are shifting to area and State specialists as a result of the increasing complexity of farming, there often remains local pressure to maintain and increase the specialized expertise of the local county agents. The same local pressures are evident in other program areas but area and State specialists are less available as alternatives.

In home economics and nutrition, where the thrust to assist the less advantaged is greatest, there remains a strong linkage with the traditional homemaker clubs even though in some States the level of direct assistance to the clubs is decreasing or has disappeared altogether. There are pressures for the traditional 4-H program to reach out more effectively to the low-income and disadvantaged youth in urban communities. However, the strong interests and role of the traditional clientele limit this movement as well as slow changes in basic program delivery methods that appear necessary to serve this new clientele.

Presently both subject matter and clientele are generally expanding in all directions and, like an inflating balloon, the limits of that expansion are dependent on the elasticity of a system that holds it together. Wholesaling through mass media and other sources of the same or similar services has increased the system's elasticity in all directions. It is unclear how it has affected the value of the services provided by the system or the problems being addressed. If demands alone were a sole measure, then obviously total benefits must be increasing.

## ALTERNATIVE SOURCES OF SIMILAR SERVICES

The business of providing information, knowledge, technology, and educational materials has been a major growth sector in the national economy. This growth is reflected in the growing volume and the diversity of subject matter being diffused, as well as in the number of sources engaged in the diffusion. Information industries constitute one of the nation's fastest growing areas of the economy.

Extension has shared in the growth of the volume and the diversity of subject matter diffused. Its response to the growth of other sources of the same services in both the public and private sector has been somewhat different in its four major program areas, so each is addressed separately here.

### AGRICULTURE AND NATURAL RESOURCES

The private sector provides abundant information and technical assistance to agricultural producers. According to one estimate, the number of person years in the private sector providing extension-like services is about triple that of agricultural Extension programs. Farm suppliers are a major source of new information and technology. Farm magazines are another.

Extension appears to complement or supplement rather than compete with these sources. For example, there is some evidence that Extension serves some farmers as a source of "objective" verification of information from other sources. It also performs a referral function.

Farm magazines and other mass media draw upon Extension staff and materials for a significant portion of their information base. Extension serves increasingly as a "wholesaler" as opposed to a retailer of agricultural knowledge.

Extension, in some cases, also has fostered the growth of private sector capability to provide the more routine or client-specific services. Organization of producer cooperatives for integrated pest management services and farm record-keeping and farm management associations are examples. Also, Extension is now beginning to charge for certain services, such as soil testing and publications. Charging for these services encourages private sector entry.

Data from one study show that large, commercial farm operators are more likely than small farm operators to find alternative private sources of information more readily available or better suited to their needs. The same study also indicated that large operators use Extension information more often than small operators and were more likely to find it suitable to their needs.

The natural resources Extension program has remained fairly small. Extension has responded to growing needs in this area chiefly by emphasizing environmental and health aspects of agricultural Extension.

## HOME ECONOMICS AND NUTRITION

Rapid changes in technology for the home, food processing, and food products have generated many new sources of home economics and nutrition information and much new subject matter that reaches the homemaker through a wide variety of modes. One Extension response has been to focus home economics efforts more strongly on consumer protection and education.

Wholesaling through mass media and other public and private agencies is not uncommon. Here, too, Extension appears to implement or supplement new sources. At the same time, Extension's program content has shifted toward social and psychological problems of families and individuals in response to new demands in these areas.

## 4-H YOUTH

Youth organizations and services have grown little in recent years, especially in rural and nonmetropolitan areas. Actually, the recent penetration of 4-H programs, although still a small part of the total program, into selected urban areas through specially funded EFNEP and urban 4-H programs may be viewed as a new educational source in urban America. In 1976 about 22 percent of 4-H participation occurred in central cities of 50,000 or more people, or their suburbs, representing about 8 percent of the youth in those areas.

Two aspects of 4-H are somewhat unique and limit the likelihood of entry of other sources of similar service. 4-H offers youth a greater breadth of subject matter than other youth organizations and extensive participation of adult volunteers, and parents, especially in the major unit of participation--the 4-H clubs.

## COMMUNITY AND RURAL DEVELOPMENT

Community and rural development Extension is a fairly new source of assistance in rural areas. Much of its expansion is a response to Federal emphasis on balanced growth between rural and urban America and a need for more public assistance to small, rural communities.

Community and rural development Extension programs help rural communities to identify their problems and take action. An important Extension role is to refer communities to public as well as private sources of financial and technical assistance. Perhaps the major role, however, is an organizational and convener role to help build communities' planning and decisionmaking capacities and to facilitate community consensus.

## RELATION TO ACTION PROGRAM AGENCIES: USDA, FEDERAL, STATE, LOCAL

Many people are unaware of the breadth and the diversity of Extension's working relationships with other action program agencies. In home economics and nutrition, States reported working with more than 250 agencies in 1977, including all Federal departments, many State agencies, and various private organizations.

In 1979 agriculture and natural resources Extension staff at the Federal level reported cooperative program work with 22 USDA agencies, 45 other non-USDA Federal agencies and commissions in 11 Federal departments, and 200 national organizations and professional societies.

4-H cooperates with several Federal agencies that provide grants to support 4-H programs concerned with juvenile delinquency, job training, housing, and other areas involving urban youth.

Community and rural development projects involve a large number of State government sources, a more limited number of Federal agencies, and many local service organizations.

The degree and type of cooperation is variable. It may be intensive in a major program (nutrition, energy, or health and safety of farmers) and involve joint development work on new programs, exchange of funds, or direct delivery of educational services to common client groups. More commonly, cooperation with other agencies is limited to client referral, discussion of problems of mutual concern, exchange of information, or joint participation in one-stop public programs.

Short-term, specialized educational assistance to other public agencies is not unusual, especially when other agency funds are transferred to Extension. More often than not, such assistance occurs when there is a strong convergence in the interests of Extension clients and the objectives of the other agency.

Training farmers and commercial applicators in pesticide application in cooperation with the Environmental Protection Agency and providing energy conservation educational programs in cooperation with the Department of Energy are important examples involving exchanges of funds, common clients, and client interests.

Memoranda of understanding or other agreements outlining areas of responsibility and cooperation are drawn at the Federal and State levels and signed by the appropriate administrators. These are shared with counties, but at that level, agreements are usually less formal. Often cooperation is in direct proportion to common location of agency offices, contacts between personnel, or depth of relative program efforts with mutual clientele.

In a survey of 51 cooperating agencies in the agriculture and natural resources area, 66 percent of the respondents considered their contact with Federal Extension specialists "very important" and 24 percent considered the relationship "somewhat important" in assisting them and their agencies to develop programs and provide information to users or clientele of their organizations.

Ninety-four percent of the respondents indicated that their State offices work with Extension at the State and county level, with 93 percent indicating that they felt Extension was helpful to their State programs. Similar results were found in corresponding surveys among home economics and nutrition cooperators and one or two single State surveys.

The cooperative role of Extension with other agencies is unique in some respects. Extension at the State and county levels often is not identified in the clients' minds with Federal and State government or the State university. More often it is viewed as a part of county government.

Partly because of this identification of Extension, or lack thereof, Extension frequently functions in a neutral or legitimizer role with or for other State and Federal agencies. This is especially true in relation to regulatory agencies. Extension also tends to widen its acceptance as a neutral convener or cosponsor of public programs, meetings, and events involving different agencies, interest groups, and objectives.

Extension views the maintenance of a strong educator image as essential to the effectiveness of its role in the diffusion of information, knowledge, technology, and educational materials, not only in relation to other public agencies, but also with its clients.

Fear of loss of credibility in the eyes of clientele is a powerful motivator. Nevertheless, in the final analysis, Extension success is in bringing about change that is perceived beneficial by clients and cooperators and its public supporters. In a way, Extension is always in a balancing act as it seeks to project the image of an impartial educator while trying to demonstrate its effectiveness as a change agent.

## EXTENSION LINKAGE WITH RESEARCH

Most of the development of subject matter for the planning and conduct of Extension programs is done at the State level, chiefly by the State agricultural experiment station. It is at the State level that the linkage between research sources and Extension program planners is most critical. Indirect evidence of the extent and depth of that linkage by program areas is shown in table 1.

Many State Extension staff members with advanced degrees have joint appointments in research and Extension. Staff with advanced degrees generally understand other researchers' work more effectively and transform it into information that communicates effectively with clients.

Statistics indicate that agriculture has a greater capability to seek out and work with research sources in developing program materials. Not only is this capability greater, but the research base provided by State experiment stations is much larger in agriculture and natural resources than in other major program areas. However, State staffs in agriculture and natural resources provide significant subject matter support to 4-H programs and some support to home economics and community development programs.

Table 1. State Extension Staffing by Level of Academic Degree

| | State Professional Staff | | |
|---|---|---|---|
| | | Highest Degree | |
| Program Area | Number | PhD | MS |
| Agriculture and Natural Resources | 3,371 | 1,962 | 1,129 |
| Home Economics and Nutrition | 1,183 | 35 | 390 |
| 4-H Youth | 401 | 88 | 308 |
| Community and Rural Development | 390 | 214 | 176 |

## AGRICULTURE

As traditionally viewed, the Extension technology transfer function involves interpreting and disseminating information about results of research and development activities, primarily from State agricultural experiment stations and USDA research.

Farmers are made aware of new technologies through demonstrations, field tests, and experiments to evaluate the applicability of new techniques and crop varieties to local conditions.

Results and observations are used to develop minor modifications to fit local needs and to prepare educational programs to help farmers learn the practical value of these techniques. Extension also relays information to researchers about success or failure of new research results.

It has been argued that effective channels in communicating farmer clientele needs and demands for new information and technology have been important factors in contributing to the high productivity of the U. S. agricultural research system over the years. Studies of factors affecting support for State level agricultural research suggest that Extension has been a part of this communication process.

Analysis by Evenson of factors affecting agricultural production change has indicated a high degree of complementarity between research and Extension in terms of their impact. Extension impact on productivity change is heavily dependent on its research base; that is, when it has something to extend. The evidence also indicates that the impact of research on productivity growth is enhanced by Extension.

Studies of rates of return from public investments in agricultural research fairly consistently report substantial net gains to the economy ranging from 30 to 60 percent. More recent efforts to calculate rates of return to Extension itself have shown similar results. However, because the predominant Extension impact is to induce early adoption of new technology, the benefits relate to a shorter time frame than the total impact of the technology. For that reason, the absolute impact from research alone over the long run appears to be larger.

## 4-H AND HOME ECONOMICS

A survey of State 4-H staffs on the adequacy of the research base they depend on for program development and maintenance indicated that the research-Extension linkage appears to operate fairly well in the case of traditional subject matter areas found in colleges of agriculture. This is true even when there is no direct linkage between academic and Extension personnel. However, the linkage is quite weak in subject matter areas for which these colleges normally have not been concerned.

It appears that 4-H Extension land-grant university linkages have not expanded in areas outside the agriculture colleges. In general, most of the research in agriculture and natural resources and nutrition is useful in its present form. Usable research in other subjects such as home economics, health, leisure, and cultural activities is notably less adequate.

Research support in the nontraditional areas is available elsewhere at land-grant universities and from other sources. Because State staffs get much of their research information from professional and academic journals, they are aware of other sources. However, it appears that the historical relations with traditional research sources and current organizational conditions and access relating to other sources, do not encourage strong interrelationships and linkages with these other sources.

Findings in the home economics and nutrition area are essentially the same as those for 4-H. They actually may be more severe because there appears to be a greater dependency on research for program effectiveness and some inadequacies in the traditional research base. State home economists reported available research useful but incomplete. They further reported a need for more research covering generally broader subject matter areas as well as more interaction with researchers.

There also appears to be some tension between nutrition scientists and home economists. Home economists see themselves as an "umbrella" profession; many nutritionists see themselves as self-standing, not under home economics. The net result seems to be that the research links, when routed through home economics specialists to county Extension home economists, are tenuous.

## EXTENSION EDUCATION DELIVERY METHODS

Extension sees itself as primarily an informal educational activity for clients who are not university students. But when performing this role, Extension often engages in other related activities such as verification of information from alternative sources, making referrals to other agencies, performing convening roles, assisting related organizations in various ways, and performing certain activities that would be more service than education.

Though not strictly education, these activities are important ways in which Extension helps clients to help themselves achieve desired ends or changes. Often these related activities help Extension "recruit" and motivate its clients and perform important public relation functions for the organization and its clientele.

Its success in the balancing role of impartial educator/effective change agent derives as much from the subject matter Extension chooses to disseminate, and the target audience, as from the methods it uses. Extension must choose subject matter that is in high demand and has a high probability of widespread successful adoption. Its rapid response and shift of resources to the energy conservation problem in the face of rapidly rising energy costs reveals this subject matter sensitivity.

Use of paraprofessionals in serving the needs of low-income and racial minority clients shows that Extension delivery modes can be adapted to meet special audience needs.

Another example of instituting a basic change in the organizational structure deals with the use of area agents and specialists. Whatever roles may be assigned to Extension, and whatever its activities are called, it must first have people in the organization who know the answers. Also, they must be easily available to clients

who need the answers. This arrangement (accommodation) comes about in several ways. County agents are more easily reached than State specialists, but they don't know as much about a given topic. Area agents and specialists effect a compromise between the degree of expertness and availability. By 1977 the number of area agents had reached 1,360.

All of these factors have a bearing on the specific educational methods and techniques that Extension uses.

## METHODOLOGY USED

Early Extension workers were called "demonstration agents." A "demonstration" farm in Texas generally is credited as the beginning of the demonstration farm concept. Home economists soon were using the demonstration method to teach homemaking and gardening skills to rural homemakers and their daughters.

These demonstrations were used principally to teach a technique for doing a job and to convince individuals or families that a new technique of farming or homemaking would work for them. At the same time, the neighbors were invited in to witness what was going on. The demonstrations were primarily person-to-person, using one-to-one techniques. But when others were invited in to see the demonstration or invited to the farmer's field when the plot was harvested, a group situation developed.

Extension uses a wide range of educational methodology. Person-to-person situations include home and office visits, telephone calls, and personal letters.

Group activities include meetings indoors or out in the field, at one location, or on a tour of several points.

In the mass media area, there are in-house publications such as newsletters and magazines from specialists and agents to each other and to clientele. Many commercial concerns, government agencies, commodity associations, and other farmer groups have internal house organs in the form of newsletters, newspapers, and magazines and rely heavily on Extension-prepared materials to fill up their columns.

The commercial mass media consists of newspapers, magazines, radio, and television. Extension generally has made effective use of these media because the media, in general, have viewed Extension messages as helpful to people and thereby worthy of their time and space. From Extension's point of view, these commercial media have been effective in reaching people and have been at low cost to the system. Variations in usage have depended somewhat on administrative support and pressures, desires and abilities of the Extension worker to use a particular medium, and reception of a particular medium to Extension materials.

Extension also has been attuned to the many audiovisual devices that have been developed for entertainment and educational purposes, beginning with the kerosene-powered lantern slide projectors from the early days of Extension, to video tape and multiscreen presentations.

In Indiana, through an experimental grant, a computer linked to campus headquarters has been placed in each county office. In several States, computer programs are being used, tied to farmers with home computers or to terminals set up at specific locations in a county.

A number of States have video tape playback equipment in county offices, and States use open-circuit television, video tape, and telephone arrangements to link county offices with State headquarters and to reach clientele.

Throughout the history of Extension, printed matter has been an important educational tool. Millions of copies of bulletins, pamphlets, and leaflets are distributed each year, generally without charge to the receiver, but increasingly sold as printing and mailing costs rise.

In general, the authors of these publications (usually subject matter specialists) have adapted the content and style of writing to the audience for which the material is aimed. But there are pressures, such as publications needed for promotion in the academic setting and judgment by peers, that have made it more difficult for the writers of these publications to write for their readers rather than to write for their scientific colleagues.

## METHODOLOGY EFFECTIVENESS AND COST

All of these techniques are effective in Extension education. In the late 1940's, research indicated that some were more effective than others, but that in general about one-third of the technology changes made by farmers came from use of person-to-person techniques, about one-third came from use of group techniques, and about one-third came from messages communicated through the mass media.

All channels of communication, however, do not have the same degree of effectiveness, even with the mainstream, middle-class clientele that Extension has reached most effectively. The more intimate or more personal channels have the greatest impact on clientele, but the numbers that can be reached by these methods are small. In general, there is an inverse relationship between the number of people that can be reached and the degree of effectiveness or impact from that contact.

Cost also enters in. A recent study in North Dakota showed that the cost per contact was between $7 and $16 for meetings, but only 3 cents per contact by television. In North Carolina, a bank of telephone messages accessed by toll-free telephone lines is costing about 50 cents per call. Farm or home visits would, of course, cost much more than any of these. When the primary contact is through person-to-person approaches, one agent or paraprofessional can work with no more than 40 to 50 families or individuals at one time.

From the beginning, adoption-diffusion researchers found that the educational methodology used must be adjusted to the complexity of the practice being recommended. When a farmer is considering a major change in his farming operations, or adopting a completely new practice, several one-to-one sessions may be necessary. When the information is simply a reminder that it is time to carry out a certain farming practice, or there is a change in the recommended variety, mass media often will do the job.

There is some evidence that strong preferences for the traditional approach from traditional clientele in rural areas have tended to slow changes in the delivery system. Extension is sensitive to these preferences because of the support it receives from traditional clientele. There is considerable evidence that commercial farm operators prefer to maintain contact with local county agents, even though the complexity of their operations and new technology increasingly require direct assistance from area or State specialists.

However, the evidence seems to be that Extension has responded to a growing clientele, increasing diversity of subject matter demands, growth of other sources of similar services, and limited staff resources by making basic changes in organizational structure and changes in delivery methods to meet the needs of the changing times.

## ADDITIONAL CONCERNS AND ISSUES

### THE PARTNERSHIP

Because of its many sources of direction and funding, Extension is not always easily understood. Unique employment features of the Extension system add difficulties.

While State and county Extension staff members are not Federal employees, the majority have Federal appointments. Staff members are permitted to participate in Federal retirement and health plans, but they are exempt from some provisions affecting the conduct of Federal employees.

At the Federal level, those who place high value on grassroots organization often are the same people who wish Extension would act more like a Federal line agency. And those in Extension at the State and local level who cite their partnership with the Federal government as a major strength of the Extension system tend to be wary of "direction" from Washington.

Tension is as much a characteristic of Extension as it is of the American system of government. Inevitably, the partnership can be strained now and then, just like a business partnership or a marriage. This can be due to differences in policy and program emphasis among participants in the system, but it also may be a reflection of the particular philosophy and style of key actors.

As a rule, the Federal, State, and local partners manage, if not fully resolve, any serious tension long before it reaches an awkward stage simply because they see that they need each other and see the mutual benefits of working with each other.

The Extension Service, however, does have its own checks and balances. When the Federal partner appears too directive, State and local actors are quick to register their opposition, either to the Executive Branch or to the Congress. Political pressure can be exerted; State legislatures can refuse to reallocate Federal funds. For example, in 1979 the Idaho legislature declined acceptance of Smith-Lever funds for the Expanded Food and Nutrition Education Program and rural development.

The Federal partner has an equal opportunity to register its concerns when State and local interests dominate the partnership. The USDA can disapprove State plans of work, request reduced funding for Extension, place increased emphasis on earmarking of funds, and, in extreme cases, even withhold Federal funds or seek formal legal redress through the courts.

## THE FEDERAL ROLE

There are many different views of the role of the Federal Extension unit. Some say it is only to administer Federal funds for State Extension programs. Others say it also is to represent the Extension Service in Washington and specifically to ensure adequate Federal funding of Extension.

While State directors generally are opposed to direction from Washington, most seem to prefer a Federal role much broader than simply administering the law. They recognize the comparative advantage of the Federal staff in providing a linkage between the State Extension Services and other Federal programs inside and outside the USDA. They want to be kept informed about legislative and policy developments in Washington. They look for help in developing State programs that will be responsive to national as well as State needs. They know that the Federal unit can serve as a catalyst and a clearinghouse for the system, thereby accelerating adoption of successful State programs. They depend on the use of special Federal funds to initiate and to support new pilot efforts. Each of these roles is now performed by the Federal staff working directly with 54 Cooperative Extension Services throughout the year.

Still, the diversity of views as to the appropriate Federal role is a continuing dilemma. At one extreme, Federal staff members may see their role as essentially helping the States do what the States want to do. As Federal staff members work with and identify with State counterparts, this is a natural response. But they also see themselves as employees of the USDA, identifying with the Department and its policies.

At times in the past, the Extension Service, specifically the Federal unit, has carried out a more substantial role as the "educational arm" of the Department. The Federal units' responsibility of coordinating all educational programs of the Department, though apparently never rescinded, is now interpreted mainly as providing a link between State Extension Services and the Department.

This lesser role is not the result of a conscious policy of bypassing Extension, but rather a tendency for individual USDA agencies (for example, the Soil Conservation Service) to undertake specific educational activities on their own. Some agencies have done so partly because they felt that Extension could not, and perhaps should not, meet their educational objectives, especially those of a promotional nature. Other agencies simply wanted more direct control of their educational programs.

The questions of the appropriate Federal role is crucial for several reasons. An obvious reason is the current pressure on the Federal budget to not fund programs with essentially the same objectives. Countering this is the recognition that the attainment of an objective may depend on the availability of a variety of educational efforts.

## THE FUTURE CLIENTELE MIX

The matter of clientele mix is the issue of whom Extension should serve. The demand for Extension assistance has always been greater than available resources. Shifts in methods of delivery in Extension education have eased the problem but cannot close the gap.

An example of this issue is the trade-off that must be made between the long-standing objective of improving the efficiency of agriculture and the objective of helping individuals improve their well-being. If the former objective is emphasized, commercial farmers who contribute the most to agricultural production are obviously the most appropriate clientele. But there has been a growing concern for those who do not contribute significantly to this goal but who also could benefit substantially from Extension.

The Extension system has not arrived at an explicit policy to resolve this conflict. Perhaps agreement would be impossible, given the characteristics of the problem. Certainly many would prefer to think that an explicit policy would be unnecessary. But this trade-off has important implications.

First, Extension personnel find it difficult to know what criteria will be used to judge their performances. The clues are seldom consistent. When administrations change, they often bring in different program emphases, and programs must be adjusted to accommodate changes in public moods and the times.

Second, the trade-off between efficiency of agriculture and enhancing the well-being of all people has important implications for future directional sources of support for Extension programs. While some among the traditional agricultural clientele are concerned that Extension is moving too far into urban and what they call "social welfare" programs, many new organizations and potential clients now claim that Extension has not adequately addressed their needs.

There also is a wide recognition within and beyond agricultural circles that support for Extension and USDA programs in general requires more and more urban and nonagricultural support.

In a sense, the Cooperative Extension system is walking a tight rope, fully aware that new bases of future support must be developed, but fearful that if it moves too quickly in that direction, the traditional support will be withdrawn before the new support bases are firmly established. Many emerging client groups, unlike farm and rural families, are interested only in one or a few specific Extension programs--like urban gardening or consumer education. So the problem for Extension is how to bridge the gap from a fairly cohesive, organized support base for all of Extension to one characterized by multiple interest groups who see themselves as deserving clients, but not necessarily as active members of an organized support base for Extension.

## ROLE OF THE COUNTY AGENT

Yet another issue that Extension will be facing in the years ahead has to do with the role of the county agent.

While the agent is generally seen as the fundamental strength of the Extension system, the agent's role has been changing as a result of the growing complexity of problems now addressed by Extension and the increasing specialization of Extension staffs. As noted in this report, many commercial farmers now go directly to the Extension specialists on campus, if not the researcher. But these farmers still see county agents as an important link to the land-grant university.

Some might conclude that the future role of the county agent will be that of a referral agent. This could be an increasingly important role in view of the complexity of public programs, policy, and regulations affecting Extension clientele. However, some might question whether the referral function is really education.

Others could see county agents working mainly with clientele other than commercial farmers. This might require considerable retraining of many agricultural agents. A shift toward multicounty or area agents, though not popular with many traditional Extension audiences, could become a useful compromise.

Future decisions concerning the role and the objectives of Extension as well as the clientele mix, will influence the kinds of adjustments required.

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